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Original Articles

THE USE OF LATERAL HEAD RADIOGRAPHS FOR EVALUATING ORTHODONTIC RESULTS AS DISTINGUISHED FROM GROWTH CHANGES

PART I. TECHNIQUE AND STATEMENT OF PROBLEM

ROBERT M. MCDOWELL, D.D.S., DENVER, COLO.

HISTORY

AN ACCURATE method for relating the denture to the rest of the skull has been sought by orthodontists for many years. The making of facial casts with dental inserts gave early evidence of this search. Angle[1] related the denture to the upper first permanent molar which he assumed to be fixed with respect to the skull. Simon[2] designed a gnathostat by which the denture was related to the orbital, Frankfort, and median sagittal planes of the head. Atkinson[3] related the denture to the key ridge, a downward projection from the zygomatic process of the malar bone which he believed to be fixed with respect to the skull. Broadbent[4] has been a leader among those workers who are using the x-ray to relate the denture to the rest of the skull.

Such a variety of methods, continuing from the beginning of the study of orthodontics to the present time, shows that it is of great importance to the orthodontist to be able to determine the true positional relationship between the denture and the rest of the skull. The number of methods reported suggests that no one technique has been found to be entirely satisfactory.

DESCRIPTION OF MATERIAL

The following methods of orienting the denture with the skull are described in the belief that they give results considerably more accurate than have been obtained up to this time. They are based on a study of serial radiographs of 100 children whose general growth and development have been within average limits as shown by the records of the Child Research Council of Denver. It is possible

From the Child Research Council and University of Colorado School of Medicine.

to speak with reasonable assurance about their growth and development because all of the 100 children have been followed by a full-time staff, which includes among others an anthropometrist, three pediatricians, a radiologist, a pathologist, an anatomist, three biochemists, a physiologist, a statistician, a hematologist, a dentist, a psychologist, and a social worker.

The dental examinations are made once each year, but the others are scheduled more often, so that for each visit to the dentist a child has 2 anthropometric examinations, 4 pediatric examinations, 4 basal metabolic tests, 4 psychologic examinations, and 4 sets of routine chest, accessory sinus, and long bone radiographs. A description of the Child Research Council and its dental study was published by Waldo[5] in 1936. The dental examination includes a visual and digital examination, full face and profile photographs suitable for measurement, dental casts, and roentgenograms. The roentgenograms include bite wing films, intraoral views of the central and cuspid regions, extraoral views of the molar and cuspid regions, and two views of the entire head. The two head pictures are an anteroposterior and a lateral view. Our discussion is limited to a consideration of the lateral head picture because it has most of the information contained in both views; because of the two it is the most accurately positioned; and because taking the one view requires less equipment for those who will be using this type of study in their orthodontic practice. In all, 520 lateral head radiographs of 103 different children have been studied. Of these 103 children, seven have had eight, fifteen have had seven, twenty-five have had six, and twenty-one have had five annual radiographs. The Child Research records now include lateral head radiographs before and after six months' intervals of orthodontic treatment. In addition to the Child Research Council group, thirty cases are being followed in this way.*

Consideration of this method is invited because it is based on longitudinal data which have been accumulating for over eight years. Further, these data have for a background a balanced growth study which deals with the same individual children included in the dental study. And finally, the application of this method to both normal and treated cases, has been tested over a three-year period. In describing the method of study, the making of lateral head radiographs will be considered first. The Child Research Council equipment, as shown in Fig. 1, is an adaptation of a setup designed to take chest pictures.[5] The adaptation was made by Charles M. Waldo.†

EQUIPMENT

Fig. 1 shows a patient in the lateral head positioner. The tube and cassette move vertically. When the tube and cassette are the same distance above the horizontal floor, the central ray from the tube passes through a round hole in the center of the ear posts making a small black area on the film. This serves as a constant check on the setting of the tube and cassette. The distance between the film and focal spot of this equipment is 91 inches. While the technique of taking the Child Research Council pictures has been similar in prin-

*Through cooperation of Dr. A. B. Brusse of Denver, Colorado.

†Former orthodontic fellow at the Child Research Council, and now at the University of Michigan.

ciple to that employed by Broadbent, there are several differences, one of which is that Child Research Council pictures have been taken routinely on a 10″ by 12″ rather than an 8″ by 10″ film. This larger film has made it possible to include the entire median sagittal circumference of the skull in every picture. This is not possible with the smaller film. Most devices for positioning the head employ a rest applied to the nasion of the subject. For the past two years a chin rest has been used on our apparatus in place of the nasion support. The chin rest gives a more positive support and has resulted in a decided improvement in the finer details of the radiographs. While it is the primary purpose of lateral head roentgenograms to show the relations of the bony structures, the value of the film is considerably increased, if in addition the outline of the soft tissues can be made plainly visible in ordinary viewing light. Of course, masking the area, use of a movable spot of light in the view box or cutting out a portion of the x-rays during exposure,[6] all make the soft tissues visible. When the capacity of the equipment permits it, the desired result can be more easily obtained by employing a high penetration so as to reduce the contrast of the film. Fig. 2 shows a lateral head roentgenogram exposed to x-rays having a KVP of 50. Fig. 3 shows a second film of the same individual but exposed to x-rays having a KVP of 100. The soft tissues cannot be seen in Fig. 2, but in Fig. 3 both the hard and soft tissues are plainly visible. The Child Research Council films are exposed for 3/20 of a second, employing 100-125 milliamperes at a 100 kilovolt peak. High-detail screens are employed. All films are given standard development.

Fig. 1.—Patient in lateral head positioner.

THE TRACING MEDIUM

Tracings are made on cellophane rather than the usual semi-transparent tracing paper. Most grades are unsuitable for our purpose. Several were tried before a satisfactory one was found.* This material has several advantages

*"Kodapak" is the type of cellophane used and may be obtained at Eastman Kodak stores. It must be "waterproof" as the "moisture proof" variety will not take ink.

over the usual tracing paper. First and most important, it is transparent. Because the film is unobscured it is possible to make a very accurate tracing. Since the material is crystal clear, the adjustment of tracings as one is placed on the other can be exact and precise, and any number of tracings may be superimposed. Static electricity makes it adhere to the film during the tracing and to the other sheets when it is superimposed. Cellophane is more economical than tracing paper. It is a delicate material. Should a corner become creased, the sheet must be thrown away. The ink line (pencil cannot be used) gives a very definite recording for superimposition. A quill pen or a fine lettering pen* should be used in making tracings because other pens make a line which is too heavy. The surface of the cellophane must be kept clean, because oil from the fingers will hinder the flow of ink. Placed on white cardboard and covered with celluloid, the tracings are easily preserved and require little storage space.

Fig. 2.

Fig. 3.

Fig. 2.—KVP, 50. Time ¾ sec. Ma., 100-125. Distance 91 in. The soft tissues can be distinguished only with difficulty because of the excessive contrast.

Fig. 3.—KVP, 100. Time 1/20 sec. Ma., 100-125. Distance 91 in. The bone has been penetrated without overexposing the soft tissues.

MAKING TRACINGS

The tracing surface must be kept cool. To have the intensity of the light source continuously variable is helpful. The working surface should be masked to the size of the film, and it is very helpful to be able to rotate the working surface of the table and its attached film while the tracing is being made. Before making tracings of a series of pictures, a preliminary study is necessary to determine by inspection the probable reliability of the shadows on the cranial periphery. At first glance the cranial periphery may appear to be unmarked except for the nasion or bregma. Closer inspection will show that the shadows of serrations along the parietal suture are also visible. Masking all but the short section of the periphery being examined is helpful. It may be difficult to identify any certain shadow in each of a series of pictures because it may be indistinct and because there may be many shadows having a similar appearance. Five to ten minutes' study will usually suffice to identify

*Leroy Lettering Pen No. 00.

a few reliable points in each of a series of six or seven pictures. These points which have been located by inspection and found to be reliable are used to prevent rotation as one tracing is placed upon another.

VISIBLE DETAILS

Some of the points which are recorded will, of course, be different for each series of x-rays. In general, the following details as shown in Fig. 4 should be observed and recorded: The median sagittal circumference of the cranium and the face, the nasion, serrations along the parietal suture, the bregma, the Bolton point, the sella turcica, the anterior nasal spine, the orbital point, the sphenomaxillary fossa, the floor of the nose, the incisor teeth, the anterior border of the ramus at the occlusal level, and the occlusal plane. Not all of these points are employed as a basis for superimposition of any one series of films, because use of such a large number would lead to confusion.

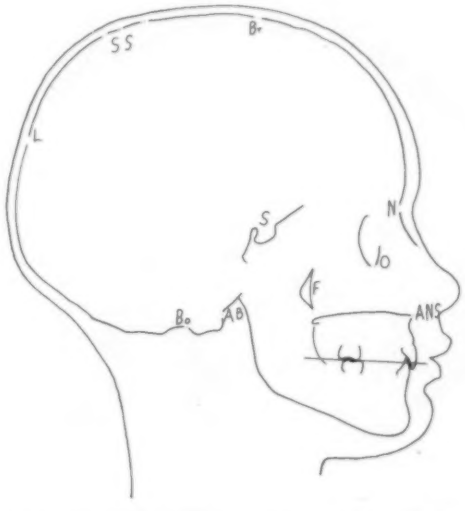

Fig. 4.—Details to be recorded in tracing a radiograph: *N*, nasion; *Br*, bregma; *SS*, serrations along parietal suture; *L*, lambda; *BO*, Bolton point; *AB*, anterior border of occipital condyle; *S*, sella turcica; *O*, orbital point; *F*, sphenomaxillary fossa; *ANS*, anterior nasal spine. The floor of the nose, incisor teeth, occlusal plane and median sagittal circumference are not labeled but are also to be included in each tracing.

DOUBLE IMAGES

Most of the above points are on the midline and are therefore represented by one shadow on the film. Paired structures often are not exactly superimposed in the lateral head view for the following reasons. With respect to external auditory meati, asymmetries are very common. When the head is properly positioned, structures which are not symmetrical cast two shadows. Again slight variations in position are common. Paired structures even though they are symmetrical make two images if the positioning is not absolutely accurate. Further, unless in the path of the central ray from the tube, paired structures, even though perfectly symmetrical and correctly positioned, will cast two shadows because of varying amounts of magnification due to their unequal distances from the film. Increasing the film focal spot distance reduces this.

For one or more of the above reasons various structures such as the posterior borders of the mandible appear often as a double image. In making a tracing of such a film, a mean of these shadows should be employed, the pen bisecting the difference between the two images. Such a procedure tends to neutralize differences due either to positioning or to asymmetry and avoids the confusion of many lines when several tracings are to be superimposed.

SUPERIMPOSITION OF TRACINGS

The superimposition of tracings is the placing of one upon another so that corresponding parts coincide according to some chosen plan. Linear and area measurements direct from the film may be useful; however, the same measurements made from tracings of the film have been found to be more accurate. In addition, a series of tracings gives a pictorial representation of changes due to growth or treatment which is often more valuable than a statistical one.

Fig. 5.—Six tracings of J. M. superimposed on the nasion to show that all other points have moved with respect to the nasion during each year of growth.

USE OF FIXED POINTS

If there were certain fixed points of the growing skull, it would, of course, be desirable to use them as a basis for superimposition. However, a study of the head radiographs of the Child Research Council has shown that all aspects of skull growth are relative. Fig. 5 shows six tracings of J. M. superimposed on the nasion. Notice that all other points of the skull have moved with respect to the nasion in each of the five years of growth represented. By superimposing the same tracings on the sella turcica, Fig. 6, all other points of the skull are shown to move with respect to the sella during growth. Figs. 7 and 8 show the same to be true of the tip of the chin and posterior portion of cranial

periphery. These and other superimpositions show that all points of the skull move, and that no detail of the skull is fixed with respect to any other during growth. By definition any given position can be described only by relating it to something else. Similarly, the position of any detail in the lateral head x-ray can best be described by relating it to some other aspect of the skull. If one keeps this in mind, then certain cranial points may be considered fixed for the purpose of describing changes due to growth or treatment. But no detail of the skull as seen in a lateral head radiograph can be a truly fixed point during growth.

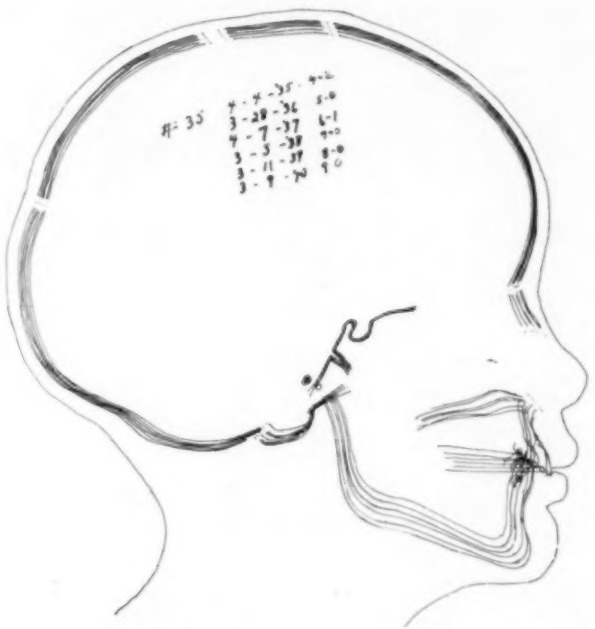

Fig. 6.—Six tracings of J. M. superimposed on the sella turcica showing that all other points have moved with respect to the sella during each year of growth.

DEFINITIONS

Reliability is the all-important attribute of cranial landmarks. By reliability is meant the accuracy and constancy with which a given landmark may be located in each of a series of roentgenograms. Details which are sufficiently reliable in each of a series of roentgenograms to be used as part of the basis for superimposition are called landmarks. Nasion, bregma, and lambda are terms borrowed from anthropometry. As employed in x-ray craniometry they refer to the most prominent shadow in the region of the anthropometric point. After a little practice, the reliability of a given landmark may be estimated with considerable correctness, but its true worth is not established until the comparisons of superimposition have been made. If a landmark were completely reliable it would be possible to locate it with unerring accuracy in each of a series of pictures. Because none of them are entirely reliable in all cases, it is essential to evaluate each landmark as it is observed in lateral head roentgenograms.

EVALUATION OF LANDMARKS

Cranial Periphery

The cranial periphery from nasion to Bolton point ranges in length from fifteen to eighteen inches. This line, formed by the junction of the hard and soft tissues, is defined by sharp contrasts on the film. Since it is a midline, the periphery never appears as two images except occasionally in that portion immediately posterior to the Bolton point. Movement during exposure, since it tends to be a rotation about the ear posts, obscures the outline of the cranium less than it does other details. Of all the possible landmarks it is the only one which is defined definitely in every one of the Child Research Council lateral head roentgenograms.

Fig. 7.—J. M.'s tracings superimposed on the tip of the chin to show that all other points have moved with respect to the chin during each year of growth.

Serrations Along the Parietal Suture

There are often many (ten to twenty) usable shadows on the cranial periphery between the bregma and lambda. Of 200 cases which have been observed, only one had no shadows visible along this section. Because these shadows are fine and on the midline, they can be marked precisely and accurately with a pen. As there are usually several to choose from, the selection can be limited to a few good points with the result that these points are the most reliable along the entire periphery in about 60 per cent of the cases. Because they are fine, these lines are easily obscured by movement during exposure of the film.

Nasion

A nasion can be located in almost all films, but occasionally it is a large "V" shaped shadow with hazy margins due to the character of the bone, not to movement during exposure. The nasion is the most reliable point along the

entire cranial periphery in about 40 per cent of the roentgenograms. Because the bulk of the nasial bone is small, the factors which give a satisfactory exposure of the rest of the skull produce a very dense shadow in the region of the nasion and make it difficult to locate the actual point. This difficulty is eliminated by cutting out some of the rays in this area with a lead diaphragm, as described by Dr. Higley,[6] or by reducing the degree of contrast in the entire picture by employing a high penetration (90 to 100 KVP), as described earlier in this paper.

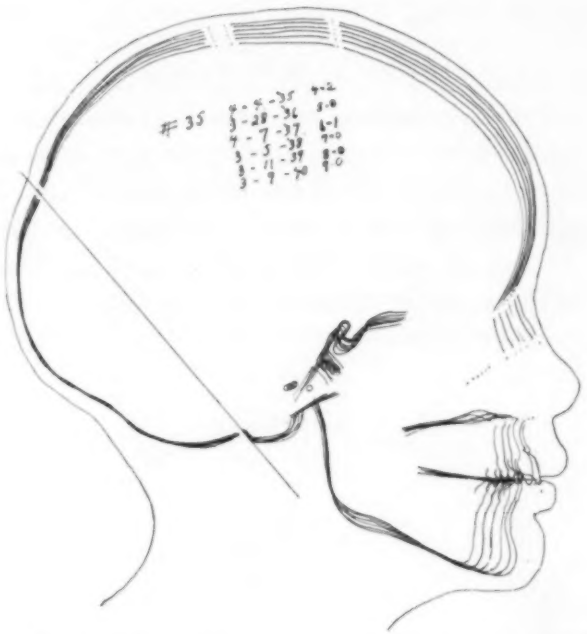

Fig. 8.—J. M.'s tracings superimposed on a line connecting the lambda and Bolton to show that all other points have moved with respect to the posterior portion of the cranial periphery during growth.

Bregma

The bregma can be located in almost all pictures. However, it is quite frequently indistinct and often it is a large shadow with hazy margins not due to movement during exposure. It is seldom the most reliable point along the cranial periphery.

Bolton Point

The Bolton point is the highest point in the notch immediately posterior to the occipital condyles. After three years of age this point can be located in each of a series of pictures with less accuracy than can any of the other landmarks along the cranial periphery. This is true because the point is on the arc of a circle three to seven millimeters in diameter, and therefore considerable variation in the estimation of the highest point is possible. The notches are sometimes registered by a double image because they are not midline points. To add to the difficulty, the mastoid processes and the neck muscles make this are more and more obscure as the child matures. For those who wish to use the Bolton plane as the basis for orientation, a corrected Bolton point may be obtained by superimposing the tracings on the outline of the

cranium and smoothing the first estimates of Bolton points along a straight line radiating away from the center of the cranial mass.

Anterior Border of Occipital Condyle

The point marked by the junction of the anterior border of the occipital condyles with the basilar portion of the occipital bone, while it is slightly more reliable than the Bolton point, has the same disadvantages. It is not a midpoint. It is obscured by the developing neck muscles and occasionally by the shadow of the styloid process.

Center of Sella Turcica

If the center of the sella is marked on tracings of each of six or more serial roentgenograms of an individual, the estimates may vary within a circle of one to three millimeters diameter. If this point is to be used, all of the tracings should be superimposed on the outline of the sella and contiguous basilar structures and the average of all centers substituted for the first estimate on each tracing. To superimpose directly on the outline of the sella is a more accurate and more simple procedure.

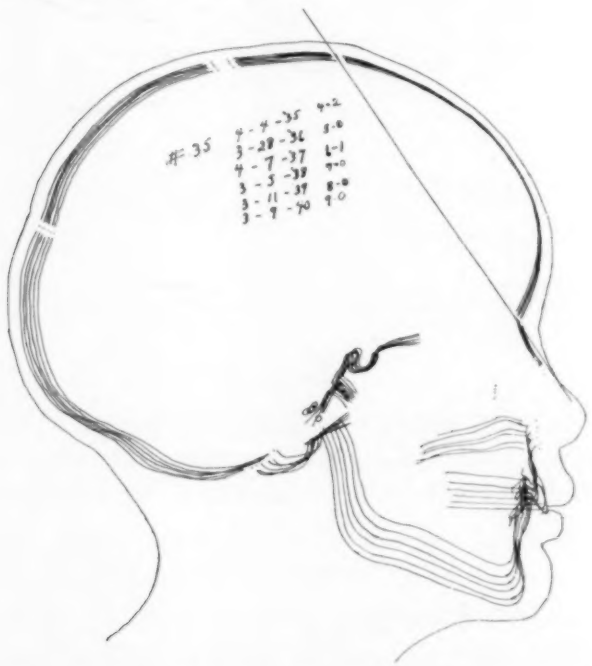

Fig. 9.—J. M.'s tracings superimposed on the line connecting the bregma and nasion. With respect to this plane of the head movement due to growth shows a regular pattern.

CONSIDERATION OF VARIOUS SUPERIMPOSITIONS

Even though we do not know the details of how the skull grows, and even though there are no fixed points of skull growth, there are, however, many superimpositions which make useful representations of growth. Fig. 9 shows J. M.'s tracings superimposed on the line connecting the bregma and nasion and dividing the linear increase equally at both ends. This superimposition

represents all growth as downward and backward movement in the direction of a perpendicular to the line. The movement of the tip of the chin, of the incisor teeth, or of all points in the region of the face represents a composite of facial and cranial growth. Because cranial growth is small and regular, allowance can be made for this factor in the estimation of facial growth. Fig. 10 shows J. M.'s tracings superimposed along the line connecting the sella with a shadow along the parietal suture. This superimposition shows the main movement due to growth to be in a downward and forward direction. Here again the movement shown is a composite, a fact which must be taken into account in estimating growth of any particular area. Fig. 11 shows J. M.'s tracings superimposed on the line connecting the nasion and Bolton point. This superimposition shows movement due to growth in both directions along a perpendicular to this line. Dr. Broadbent[4] recommends superimposition on a registration point R, the mid-point of a perpendicular erected from the center of the sella turcica to the Bolton plane. For a time this basis for superimposition was employed in the study of Child Research Council lateral pictures. However, considerable difficulty was experienced in locating the Bolton point with enough accuracy to permit measurement of growth changes. In a search

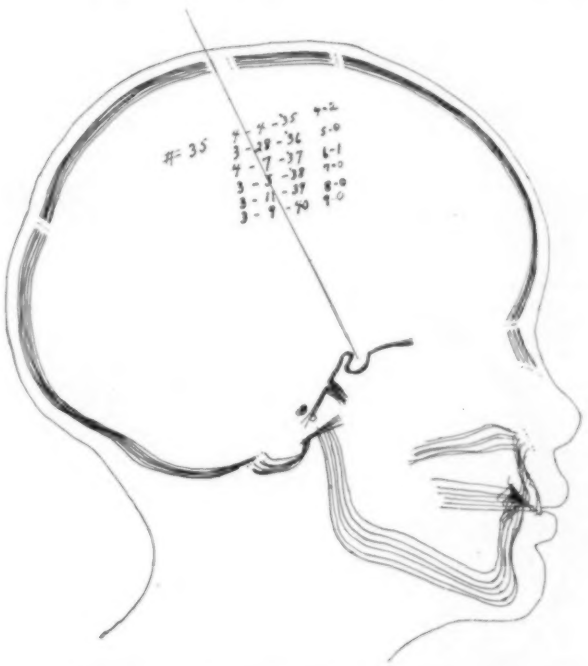

Fig. 10.—J. M.'s tracings superimposed on the line connecting the sella with a shadow along the parietal suture. This pattern is different but no less definite than that shown in Fig. 9.

for more accurate landmarks the cranial outline, as will be described shortly, was found to be a more satisfactory basis for superimposition for the ages 3 years to maturity. During the period from birth to 2 years, before the development of the mastoid process and of the neck muscles has obscured the Bolton point, the Bolton plane as a basis for superimposition is more usable. Fig. 12 shows J. M.'s tracings superimposed along the line connecting the bregma and

the anterior border of the occipital condyle. This superimposition gives a useful representation of the anteroposterior position of the face. Since in life the skull is pivoted on the occipital condyle, the profile from the nasion to the mandible in this superimposition represents actual developmental changes in the prominence of the lower face. Fig. 13 shows J. M.'s tracings superimposed

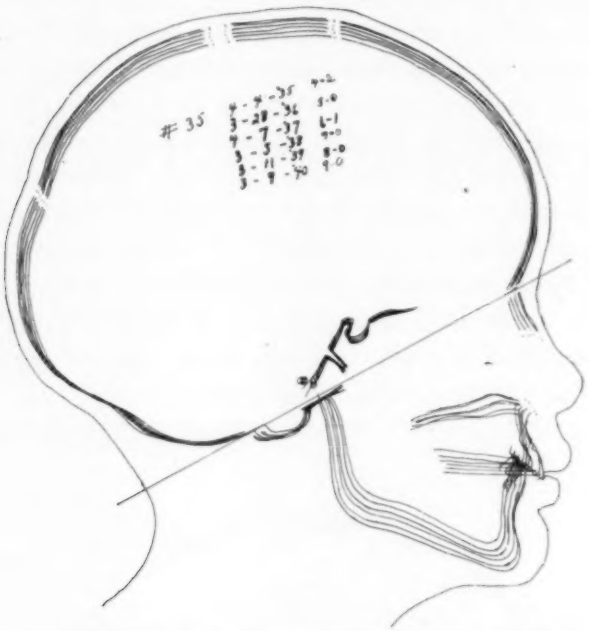

Fig. 11.—J. M.'s tracings superimposed on the line connecting the nasion and Bolton points and showing movement due to growth in both directions along a perpendicular to the line.

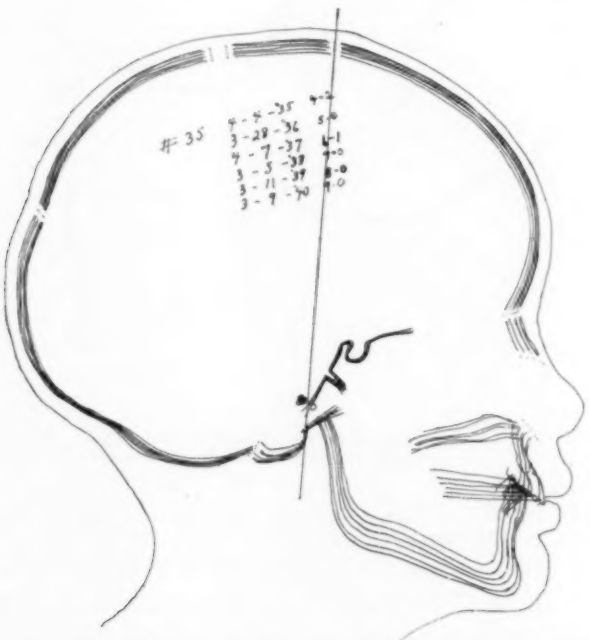

Fig. 12.—J. M.'s tracings superimposed along a line connecting the bregma and the anterior border of the occipital condyle. Since the skull rests on the condyle this arrangement gives a true picture of developmental changes in the prominence of the lower face.

on the borders of the mandible. Superimposition on the mandible shows dimensional increases according to the mandibular growth pattern and is an excellent way of checking supposed changes in the body of the bone due to orthodontic treatment. Fig. 14 shows J. M.'s tracings superimposed on the entire outline of the cranium, employing the shadows representing the nasion,

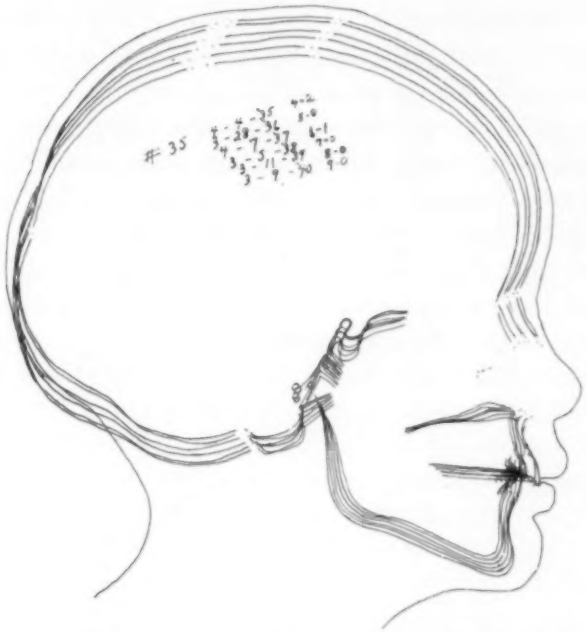

Fig. 13.—J. M.'s tracings superimposed so as to keep the borders of the mandible parallel. The mandible is seen to have its own pattern of growth.

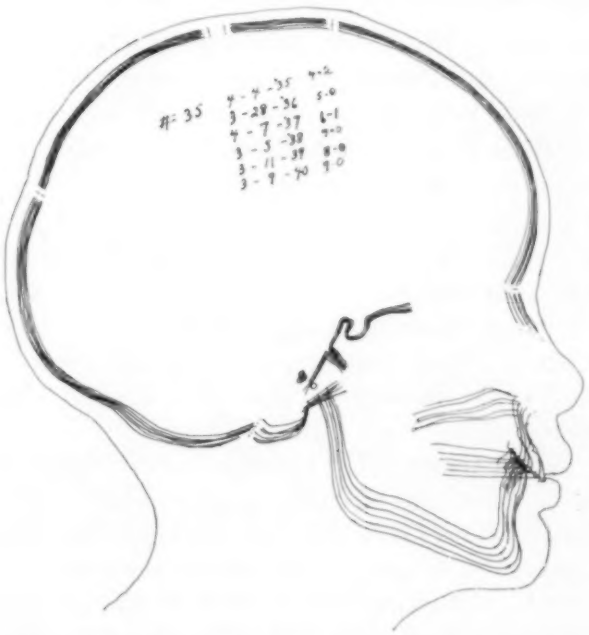

Fig. 14.—The basis for this superimposition of J. M.'s tracings is the entire cranial outline. Dots representing the various shadows are employed to control rotation as one tracing is placed upon another. While all of the superimpositions shown in Figs. 9 to 13, inclusive, may be helpful, the cranial outline is the most useful basis on which to superimpose.

bregma, lambda, and two serrations along the median sagittal suture to control rotation as one tracing is placed upon another. The movement of the facial profile in this case represents facial growth plus a minimum of cranial growth, and for practical purposes may be considered to represent only facial growth.

INTERPRETATION OF SUPERIMPOSITIONS

Study of an individual pattern of growth need not be limited to one superimposition. A second and third may each yield additional information. Frequently, superimposing on an area where change is occurring constitutes a superior method of defining that change. To superimpose on the mandible is particularly desirable when intermaxillary elastics have been worn during treatment. The reliability of the landmarks upon which it is based determines whether or not use of a superimposition is practical.

No one superimposition can ever show precisely the direction or the exact amount of actual growth of each skull bone, but represents merely an approximation of true growth. To distinguish between changes due to growth and treatment, as shown by tracings, requires some experience and study. However, if tracings can be regularly and accurately superimposed, the interpretation of the results shown by any of a number of different superimpositions, as illustrated above, is not difficult. Figs. 9 to 14, inclusive, show only a few of the many possible ways to superimpose tracings of serial x-rays. Each superimposition of J. M.'s tracings gives a slightly different picture of his characteristic pattern of growth. Any of these superimpositions would evidence marked changes in his facial development. While they do not have equal value, all of them can be useful.

SUPERIORITY OF SUPERIMPOSITION ON CRANIAL PERIPHERY

If all of the various bases for superimposition could be located and employed with 100 per cent accuracy, choice between them could safely be left to personal preference because the remaining differences would be of minor importance. Far from being on a par, the various bases for superimposition vary greatly in their resulting accuracy.

The superimposition on the cranial periphery shown in Fig. 14 is particularly valuable for the following reasons. First and most important, the landmarks upon which it is based have a very high total reliability. Some of the superimpositions which have been suggested are based on a line which is thought of as a plane. Their accuracy is dependent on the reliability of only the two landmarks at the ends of the line. It is evident that within limits the greater the number of accurate landmarks employed, the greater the total accuracy of the superimposition. The long line representing the periphery of the cranium has the reliability of a very large number of definite points. While they are essential in controlling rotation during superimposition, points are of secondary importance, the line representing the cranial periphery being of primary significance. If the problem were to accurately superimpose straight lines fifteen inches long, its simplicity and resulting accuracy would be easily recognized. That the lines are curved in arcs of gradually increasing size, as are the growth lines of the cranium, complicates the procedure only slightly

without appreciably affecting the accuracy. This basis for superimposition has maximum reliability because it employs all of the points which may be considered landmarks and the entire line of the cranial periphery.

Second, about 90 per cent of cranial growth is complete at six years of age. Thus, it is obvious that there will be little change in the periphery of the cranium during the relatively short period of orthodontic treatment. Tracings of serial roentgenograms of older individuals and of younger children before and after short periods (six months or less) will superimpose almost exactly along the cranial periphery. This small amount of change adds to the accuracy of a superimposition based on the cranium. Third, this basis for superimposition is outside the area in which changes are to be measured, thus avoiding confusion in measuring the effect of growth and of treatment. Fourth, while it is possible to interpret the results shown by any superimposition, the interpretation is less difficult in some cases than in others. The differences shown by a superimposition on the basis of the cranium are easily evaluated because they harmonize with what is already known about face growth. The value of easy appraisal is illustrated by a comparison of Figs. 7 and 14. The differences shown by the superimposition in Fig. 7 are strikingly definite and symmetrical; however, we might experience difficulty in interpreting them as changes in the position of the tip of the chin, though that is the most definite change shown in this particular case. The differences shown in Fig. 14 are more obviously useful in an appraisal of changes in the region of the denture and face with which we are primarily concerned. Fifth, the more simple the method employed, the more widely it can be used with accuracy; the more measuring and drawing required, the less the resulting exactness. Superimposition on the basis of the cranium is a comparatively simple and easy technique because it requires neither measuring nor drawing—only tracing.

The method described is not without limitations. Slight movement during exposure of the film blurs the fine details along the cranial periphery which are important to the technique. Correct duplication of position in taking each of a series of pictures is difficult. Tracings of serial radiographs of only the same individual may be advantageously compared to show movement due to growth or treatment. While these limitations are very real, they do not seriously affect the usefulness of the technique.

APPLICATIONS OF TECHNIQUE

Having described the taking of lateral head pictures and the making of tracings and having given the reasons for employing the outline of the cranium as one basis for superimposing the tracings, it remains to show what this technique teaches us about changes in the denture due to growth and how to distinguish these growth changes from those due to treatment.

A study of the tracings of our serial lateral head radiographs shows that each child has a definite and individual pattern of skull growth. The pattern for each child seems to be different from that of any other child, but once established it is followed with remarkable regularity. The wide range of individual patterns suggests that averages of growth changes be applied very

cautiously in making a diagnosis of any particular case. Such movements as tipping of the occlusal plane, opening of the bite, forward or backward shift of the mandible, and changes in the angulation of the incisor teeth are readily shown by this technique.

The remarkable constancy of the individual pattern, the striking variation between growth patterns of different individuals, and the use of this technique to define changes produced in the denture and face by orthodontic treatment will be discussed in subsequent communications.

SUMMARY

The technique described uses tracings of lateral head roentgenograms to picture movement in the denture and face due to growth or orthodontic treatment and relates these changes to the entire skull.

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CORRECTION OF CLASS II, DIVISION 2, CASE WITH BITE PLATE

WALTER MOSMANN, D.D.S., NORTH BERGEN, N. J.

IN THIS report of a Class II, Division 2 case, the object will be to show how dentures will alter their positions and come into balance and occlusion by the use of a bite plane with auxiliary springs.

The patient came into Columbia University Orthodontic Clinic, and because of financial reasons it was decided to use the bite plane to see if aid could be brought about. It was a case of correcting with a bite plane or doing nothing.

The patient, a girl, aged 14 years, was a full-term, breast-fed baby and had had only two of the childhood diseases, whooping cough and chicken pox. Her tonsils were removed at the age of 7. The patient had enjoyed excellent health and was now physically active and well developed.

Fig. 1. Fig. 2.

Fig. 3.

Gnathostatic diagnosis revealed the following anomalies:

Fig. 1, a front view of the casts, shows the extreme amount of overbite, so great that the mandibular teeth cannot be seen. Note the prominence of the maxillary left first premolar.

Read before The New York Society of Orthodontists, Nov. 11, 1940.

In Fig. 2, the right and left views show the distal relationship of the mandibular molars, the lingual inclination of the central incisors. The mandibular right and left first premolars are in linguo version to the maxillary right and left first premolars.

On the occlusal surface of the upper denture, Fig. 3, note the closeness of the central incisors to the orbital plane, even though the lateral segments are in their correct relationship to the orbital plane. Note the buccal prominence of the maxillary left first premolar. The mandibular central incisors are on the orbital plane; the denture is swung to the right. This could not be seen on the front view casts because of the overbite.

The gnathostatic photos, Fig. 4, show a fairly good profile from the Frankfort horizontal line to the stomium; below this there is a mandibular retraction, curling of the lower lip, and an enlargement of the lower lip.

Fig. 4.

The chart, Fig. 5, shows a 6.5 mm. contraction of the lower incisal segment. The mandibular lateral and maxillary incisal and lateral segments are nearly normal according to Pont's index. On the graph in the upper right hand corner, note that the incisors are 2.5 mm. forward of the orbital plane instead of the accepted 5 mm. In the lower chart note the difference in the curve of Spee of 17 degrees on the left and 13 degrees on the right. The occlusal plane in the maxillary incisors shows an abstraction (lower of the two lines) where the mandibular incisors show a slight attraction, especially on the left side.

The differential diagnosis, Fig. 6, shows the above-mentioned conditions with their degrees and symmetrical and asymmetrical conditions.

Fig. 7 shows the bite plane with auxiliary springs, the only type of appliance used in this case. This appliance was inserted and slight pressure was brought about on the two central incisors by the .020 spring wire. The vulcanite was relieved in the maxillary left first premolar area and pressure of the lock spring moved the first premolar lingually, which brought it into harmony with arch form. The incline on the bite plane was sloped so that the mandible would move forward; the incline was also made with a slope to the left (greatest thick-

Name

Date 10/4/38

Age 14 yr No. 2097

Summa 30½ Points 37½ - 46½

Hawley C / L / C =

R 19¼ | 19¼ L + .7
18½ | 18½
24¼ | 21½ + .1
23½ | 23½
25½ | 21½ − .3
23½ | 23½
18½ | 13 − 6½
18½ | 18½

M+P R L

E-E-P O+P

12 yr NORM USED

E-E-P R L MP

6 5 4 3 2 1 | 1 2 3 4 5 6

13 17

6 5 4 3 2 1 | 1 2 3 4 5 6

Fig. 5.

Date 11-14 1938

DIFFERENTIAL DIAGNOSIS

Name ..... Age 14 yr Sex F Case No. 2097 Chart No. .....

A—The relations of the dentures to the median plane.

			Degree	
Upper	Contraction / Distraction	Horizontal localization: lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical (Incisal)
		Vertical localization: dental–alveolar–maxillary		
Lower	Contraction / Distraction	Horizontal localization: lateral–incisal–Total	Mild (Lateral) / Medium (Incisal) / Extreme	Symmetrical / Asymmetrical
		Vertical localization: dental–alveolar–mandibular (Incisal)		

B—Relations of the dentures to the orbital plane.

			Degree	
Upper	Protraction / Retraction	Horizontal localization: lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization: dental–alveolar–maxillary		
Lower	Protraction / Retraction	Horizontal localization: lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization: dental–alveolar–mandibular		

C—Relations of the dentures to the horizontal plane.

			Degree	
Upper	Attraction / Abstraction	Horizontal localization: lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization: alveolar–maxillary		
Lower	Attraction / Abstraction	Horizontal localization: lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization: alveolar–mandibular		

Fig. 6.

ness on the right side, so that in closing the mandible slid to the left). During treatment it was noticed that, as the incisors moved labially, a space developed. The mandible did not move forward as fast as the maxillary incisors did, so three times during treatment the plane was added to in order that the mandible be brought as far forward as possible. The plane was in the mouth for a period of fourteen months; of this time only the first eight months were active. In the first eight months the auxiliary springs brought the incisors and left premolar into proper position. The remainder of the time was used to allow for vertical growth in the lateral region and for changes to occur in the mandible in order to assume the forward position.

Fig. 7.

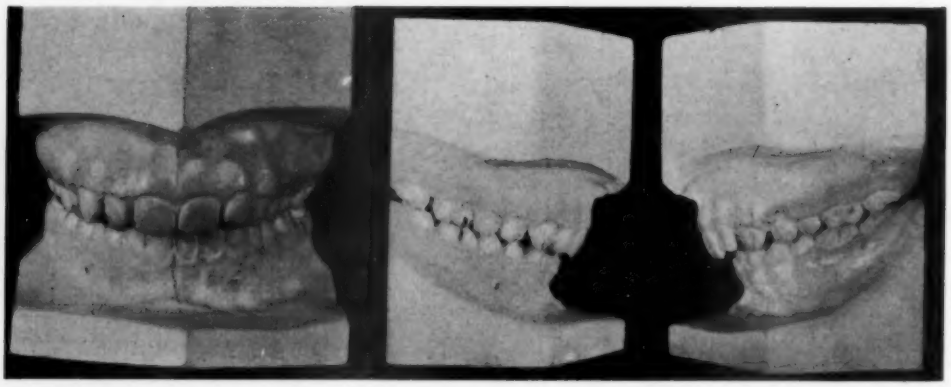

Fig. 8. Fig. 9.

Fig. 8 shows the front view with the overbite corrected, also the midline corrected, also harmony in the maxillary incisors and left premolar area.

Fig. 9 shows the right and left sides with molar relationships corrected and the inclination of the incisors in their normal positions.

The occlusal view, Fig. 10, shows the upper lateral segments in the same position as before treatment and the incisors forward and rounded out. The

lower segment shows the arch in slight distal relationship to the orbital plane. The canines are now on the orbital plane, where before treatment the tips of the central incisors were on the orbital plane. Note the midline has also been corrected.

The gnathostatic photos, Fig. 11, show the mandible moved forward and the curling of the lip less evident. There is still slight mandibular retraction, but the new position is in better harmony with the other structures of the head, due to the increasing of vertical height and forward position of the mandible.

Fig. 10.

Fig. 11.

In Fig. 12 the gnathostatic chart shows a slight contraction in the maxillary incisal area due to the slight pressure on the premolar (left) to bring this tooth into harmony with other teeth on the left side. The contraction in the mandibular incisors is now 3 mm. instead of 6 mm. as before treatment. The lower incisal segments expanded as they came into occlusion with the upper segments, which from the start were in good width. In the chart on the upper right we see that the maxillary incisors are now 5 mm. forward of the orbital plane, which is normal for this case. In the lower chart note that the upper

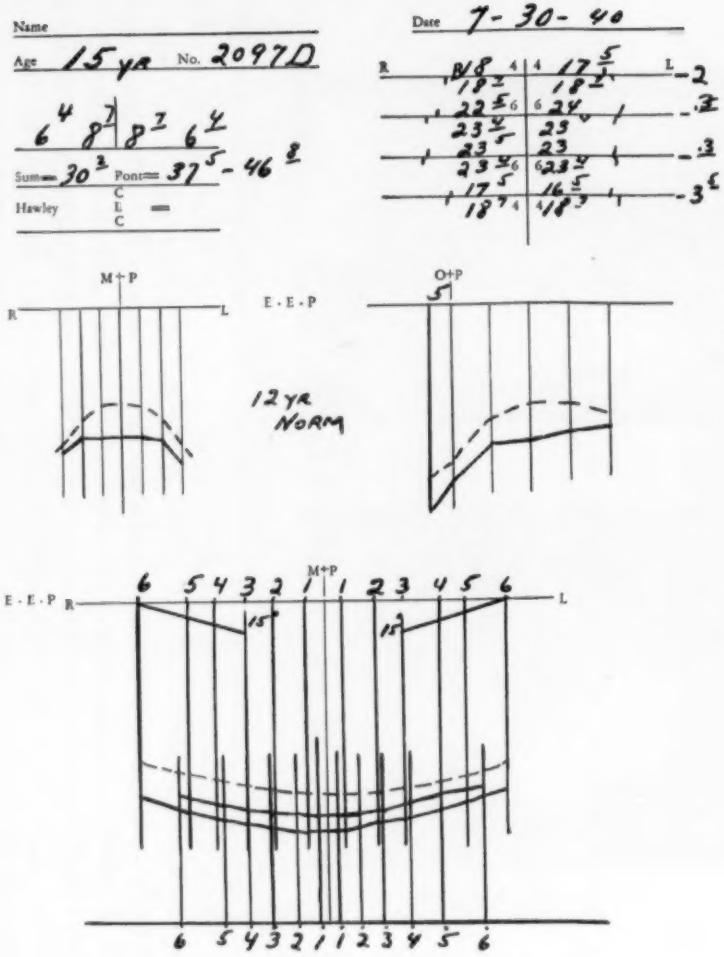

Fig. 12.

Date 7-30 1940

DIFFERENTIAL DIAGNOSIS

Name ..... Age 15 yr Sex F Case No. 2097D Chart No. .....

A–The relations of the dentures to the median plane.

			Degree	
Upper	Contraction / Distraction	Horizontal localization lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization dental–alveolar–maxillary		
Lower	Contraction / Distraction	Horizontal localization lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization dental–alveolar–mandibular		

B–Relations of the dentures to the orbital plane.

			Degree	
Upper *	Protraction / Retraction	Horizontal localization lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization dental–alveolar–maxillary		
Lower	Protraction / Retraction	Horizontal localization lateral–incisal–Total	Mild Dental / Medium Mandibular / Extreme	Symmetrical / Asymmetrical
		Vertical localization dental–alveolar–mandibular		

*Upper – Negative Findings

C–Relations of the dentures to the horizontal plane.

			Degree	
Upper	Attraction / Abstraction	Horizontal localization lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization alveolar–maxillary		
Lower	Attraction / Abstraction	Horizontal localization lateral–incisal–Total	Mild / Medium / Extreme	Symmetrical / Asymmetrical
		Vertical localization alveolar–mandibular		

Fig. 13.

and lower dentures follow each other, and the curve of occlusion follows the normal occlusal curve. The curve of Spee is now even, fifteen degrees on each side.

The differential diagnosis chart, Fig. 13, shows the above conditions outlined, and in comparison with the first differential diagnosis one can see the changes that have taken place.

Radiographs at the termination of treatment show normal development (Fig. 14).

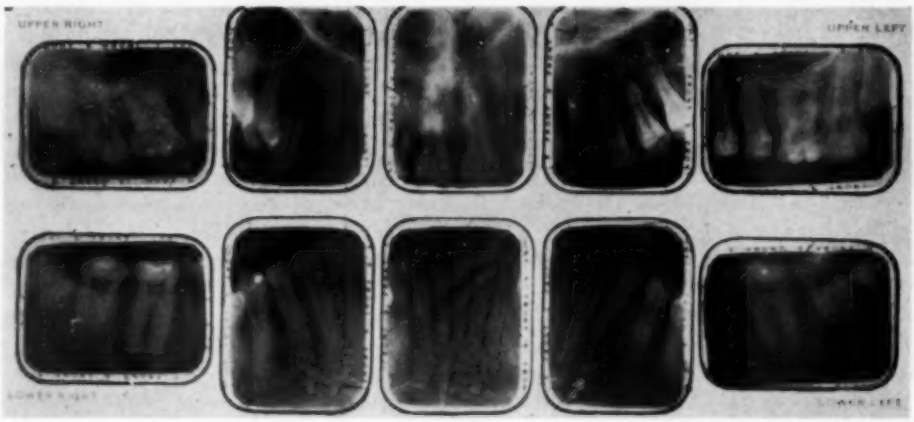

Fig. 14.

In conclusion the case unfolded itself with the least amount of effort. The functional positions of the dentures are now in relationship where forces will be in favorable action. I feel with the present setup the result will be lasting and beneficial to the patient.

DISCUSSION

Dr. Carl Breitner.—There are a few important problems involved in these cases. One is which part of the skull developed in order to correct the malocclusion. Was it the alveolar process, or was it a new position of the mandible in relation to the skull, or any change in the shape of the mandible that brought about the beneficial effect? I wonder whether Dr. Mosmann would give us his opinion on this, and maybe others would express theirs.

There is another very important problem involved, and that is why some cases respond so beautifully and others do not. It seems a very difficult question, that is true. I certainly am not able to answer that question, but I may give you a suggestion to consider. I remember a case, which I probably will remember always, for it was very impressive. It was not one of my patients. It was just a young girl whom I happened to know. I met her at the age of sixteen, and she had a complete Class II, Division 2, and had never been treated. When she became sixteen or seventeen years of age, of course, she became conscious of her deformity, and she wanted something to be done about it, with the result she did something. As I pointed out, I was not her dentist. What she did was the following: She went to a dentist and had her four upper incisors devitalized, and jacket crowns made in a better direction, not pointing out to the horizon but pointing out to the mandible itself. That was one thing, and it improved her looks very much. A second thing she did was she kept her mandible voluntarily always in a corrected position when she was in company, so that I really think nobody could have noticed that this girl had a complete Class II. I have known her for many years, and as often as I met her, I would say, "Let me see your Class II," and she could push back her mandible to the original position, and she had a Class II. But generally you could not notice it. From that you can readily see that a patient who

keeps his mandible always in a new corrected position, just as the bite plate does, never really improves the condition of his jaw relations. On the other hand, we see that bite plates do the same thing, although we do not have the patients wear them during the night as well, but only during the greater part of the day. The problem is why. I wonder whether anybody could give any suggestions.

I, for one, would like to make the following suggestion; it is just an idea: We all know, and I think we all agree, that the shape of the mandible and the position of the mandible in relation to the skull are the result of the muscular action; at least the muscles influence its position and influence the shape of the bone not only of the mandible but of all our bones. This is, I think, generally accepted by the anatomists and physiologists. This muscular balance not only takes place while the mandible is in the rest position, but it also is present when the mandible is in a new position pushed forward by the individual. Then, of course, we have a balance between the bone and muscles in action, but we do not upset that balance. I think the balance is not only present between the muscular action and the bone at rest, but it is also present in any strenuous position, artificial position, which the patient deliberately holds. A bite plate works differently. If you put a bite plate or any device in the mouth of the patient which forces the patient to keep his mandible in a new position, he does not have to do the work, but the bite plate keeps his jaw in this position and the muscles are relaxed. Now the balance is upset, and that may be a reason why in such a case the bone may be transformed according to the new function. The function was not disturbed as long as the patient pushed his mandible forward voluntarily. If we put in an artificial means, then the balance is disturbed.

I think that this is of such great importance that it is really worth while to engage in such investigation in order to understand a little better those tissue changes and the balances of forces. I think we could improve very much and simplify greatly our treatment of Class II and Class III cases. That is why I believe we should be very grateful to Dr. Mosmann for bringing up this subject.

President Young.—Dr. Mosmann, have you anything you would like to say?

Dr. Walter A. H. Mosmann.—In presenting this case I want you to keep in mind that the upper lateral segments, the greater part of your upper denture, was in normal position to the cranium. By relieving the pressure that the incisors caused in the mandible, the mandible was allowed to come forward and to assume the position that it normally would have if the upper incisors had not locked lingually and kept it in position. So, therefore, when we relieve the pressure and move the upper incisors forward, we allow the mandible to come forward. Remember that I said the first eight months were active treatment. In that time the teeth were pushed into their proper position, but it took the remainder of the time for the mandible to adjust itself, or rather the musculature to adjust itself, and stabilize, so that it maintained that forward position.

HISTORICAL REVIEW OF THE FIRST TWENTY YEARS OF THE NEW YORK SOCIETY OF ORTHODONTISTS

JOSEPH D. EBY, D.D.S., NEW YORK, N. Y.

WE HAVE gathered at this time to commemorate the twentieth anniversary of the founding of the New York Society of Orthodontists.

Before reviewing the history of the Society, it seems appropriate to refresh our minds as to the progress and status of things orthodontic as they existed in the years prior to, and at the time of, our organization.

It is a unique and interesting fact that our New York Society was founded during the twentieth anniversary year of the American Society of Orthodontists. As at that time that grand and noble group of hallowed pioneers paused to look back over the accomplishments of their first twenty years, so do we pause today to summarize and evaluate ours. As on that occasion their thoughts looked forward in prophecy and dream, so do we today in our thought anticipate the years to come. Having participated in the orthodontic progress of the past twenty years, it is to wonder if we have lived up to the expectations of those who have gone before, and to what extent we have fulfilled their hopes.

To re-create in our minds the conditions in the orthodontic world of 1921, I have chosen to go back to the turn of the century and briefly highlight the two previous decades. Though different within themselves, they are indispensably linked together and will forever remain brilliant pages of orthodontic history.

In June, 1900, at the close of the first session of the Angle School of Orthodontia, an organization was formed to be known as "The Society of Orthodontists." Edward H. Angle was elected the first president, and the first meeting was held in St. Louis, Mo., in June of 1901. Later this society became known as the American Society of Orthodontists, and it is now the American Association of Orthodontists.

In his first president's address, Dr. Angle expressed some of the lofty ideals and purposes of the Society. It is inspiring to note, after forty years, how many of his prophecies have or are still being fulfilled. The following quotation from that memorable address should renew our courage and determination just as much today as it did many years ago.

"Orthodontia is a great science by itself, with requirements in its study and practice so radically unlike that of other branches of dentistry that the two can never be profitably combined, either in study or practice. Each seriously handicaps the other, and orthodontia naturally suffers most, for the reason that it is wholly unlike other operations in dentistry. It is therefore, least understood, least studied, and made secondary alike in dental colleges, in practice, and in dental societies. Hence it is not unlikely to follow that in proportion as a dentist is successful in other operations of dentistry, he will naturally be less success-

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ful in those of orthodontia, for in that same proportion he will have less inclination, less time, and less energy to devote to it."

The records of the graduates of the Angle School of Orthodontia, through its concluding year of 1911, signalized the trend of the future. Equal credit must also be ascribed to the many orthodontists of that period who in other ways but with equal ambition and skill trod step by step the tortuous trail which gradually has widened into the broad highway of modern progress.

The year 1911 marked the beginning of the Dewey School of Orthodontia. There was also the International School, and other schools of thought and sources of training. While these, and other types of training, seemed to provide a vehicle which carried men apace for a while, it was their own inspiration which carried them on. By 1920 orthodontists were practicing in ever-increasing numbers in every community large enough to support such a specialty.

With the growth, through orthodontic expansion, and the assimilation of other essential sciences, came the realization that no adequate foundation could be acquired through short courses of impirically selected lectures and laboratory instruction. As the universities became conscious of this growing need for more specific training, one-year post-graduate courses came into existence. Most of the larger universities throughout the country now have well-established post-graduate courses in orthodontics.

With one annual meeting held in various sections of the country, the remote location often precluded the attendance of many members of the American Society of Orthodontists. It also became apparent that different sections of the country presented entirely different local problems. For these reasons sectional societies seemed to offer a logical solution. Some sections of the United States had by this time already organized, and others had plans under consideration which later went into effect.

With steady progress, the practice of orthodontics had grown throughout the eastern Atlantic seaboard states to where a large number of orthodontists were in exclusive practice from Massachusetts to the District of Columbia. These men needed a way to become better acquainted in order that they could cooperate to a more effective and mutual advantage. That they needed a medium through which they could study and solve their problems was quite apparent. For the advancement of the science and practice of orthodontics, they wanted to combine their efforts and interests in a common cause. It was also necessary to do something to uphold the highest professional standards and protect the public interests.

For these and many other reasons known then, and which time has proved, it seemed advisable to effect an organization in this section. It was under these conditions that Dr. William C. Fisher invited a small group of orthodontists, practicing in Manhattan, to enter into a series of informal discussions, which later led to the founding of the New York Society of Orthodontists.

In the preparation of the chronologic review which follows, the minutes of all the meetings have been studied. In order to eliminate any questions of doubt and to avoid recourse to memory, all references have been copied, many verbatim as they appeared in the minutes.

So—as we look back—we find ourselves in 1921 making preparations for that unknown future which has now become our history.

. . . . . .

The *organization* meeting of the New York Society of Orthodontists was held at the Academy of Medicine, 17 West 43rd Street, New York City, on October 21, 1921. J. Lowe Young was elected to serve as Chairman pro tem, and Leuman M. Waugh as Secretary pro tem.

The Chairman then called upon William C. Fisher to explain the object of the meeting. He stated that he had recently called together a small group of men; namely, Martin Dewey, Joseph D. Eby, Henry C. Ferris, Milo Hellman, Victor Hugo Jackson, Leuman M. Waugh, C. W. B. Wheeler, and J. Lowe Young, for the purpose of discussing the advisability of organizing a society of orthodontists. It was the unanimous opinion of this group that a real need for such an organization existed, and a decision had been reached to issue a call to the exclusive practitioners throughout the State of New York.

At this time there were thirty-five orthodontists in the city of New York and twelve practicing in other cities in the State. Out of these forty-seven men, twenty-nine were present—twenty-five from New York City and four from other cities in the State. Dr. Fisher's motion to organize was unanimously carried. It was also voted that all officers should serve one year after a Constitution and By-laws had been prepared and adopted; that four afternoon-evening meetings should be held each year; and that an initiation fee of $25 and annual dues of $10 would be reasonable and adequate.

Two committees were appointed by the President: a Constitution and By-laws Committee, consisting of E. Santley Butler, C. W. B. Wheeler, and Leuman M. Waugh, Chairman; and a Temporary Committee on Arrangements with Martin Dewey, Alfred M. Desnoes, and Joseph D. Eby, Chairman. The meeting then adjourned subject to the call of the President.

The *first regular* meeting of the New York Society of Orthodontists, President J. Lowe Young presiding, was held on the afternoon and evening of December 8, 1921. Dr. Young also presided at a meeting on February 8, 1922, and at the *first annual* meeting on April 12, 1922.

During this period of the Society's existence the Constitution and By-laws were written and adopted. The first Board of Censors was elected with the following members; Leuman M. Waugh to serve two years, Martin Dewey one year, and Oscar Carrabine until April, 1922. The first Executive Committee appointed by the President included Alfred M. Desnoes, C. W. B. Wheeler, and Joseph D. Eby, Chairman.

It was agreed by the Society that *Charter* members would comprise those individuals who had attended the organization meeting at the Academy of Medicine, the first regular meeting held at the Vanderbilt Hotel, or who had paid their initiation fees and first annual dues as of December 8, 1921.

It was further understood that those orthodontists who had attended the preliminary discussions prior to the organization meeting, and who had otherwise qualified as members of the Society by December 8, 1921, were to be known as *Founder* members. (See frontispiece.)

In the original "Cash Book" are to be found the entries of forty-one names who had paid initiation fees and annual dues prior to December 8, 1921.

Of these men, Martin Dewey, Joseph D. Eby, Henry C. Ferris, William C. Fisher, Victor Hugo Jackson, Leuman M. Waugh, C. W. B. Wheeler, and J. Lowe Young may be classed as Founders: and the following as Charter members: J. C. Allan, P. R. Ashplant, J. G. Bunker, E. S. Butler, G. H. Caddick, O. Carrabine, W. C. Chapin, C. S. Conover, A. M. Desnoes, W. H. Ellis, J. Goldberg, A. V. Greenstein, L. M. Gunton, H. B. Hamilton, L. Hartley, A. Hoffman, A. B. Holt, S. L. Kregerman, J. J. Millard, E. V. Morrison, L. J. Porter, H. A. Pullen, C. A. Sayers, E. B. Schlencker, C. A. Spahn, I. Spenadel, F. A. Squires, R. B. Stanley, F. L. Stanton, H. W. Taylor, R. B. Weston, H. DeF. Whitmarsh, P. N. Williams.

Application blanks and copies of the Constitution and By-laws were sent to orthodontists in Massachusetts, Rhode Island, Connecticut, Pennsylvania, New Jersey, Maryland, and the District of Columbia.

The first scientific program was as follows:

Idealism and Orthodontia ----------Milo Hellman
Looking Both Ways after Twenty Years ----------Martin Dewey
The Outlook ----------Leuman M. Waugh

Dr. Hellman's paper was published in the INTERNATIONAL JOURNAL OF ORTHODONTIA, ORAL SURGERY AND RADIOGRAPHY, Vol. 8, No. 4, April, 1922, pages 211-217. Both Drs. Dewey and Waugh spoke from notes and it is regrettable that their addresses were never transcribed and published. It would be of great interest to compare the present with Dr. Waugh's "Outlook" and Dr. Dewey's prophecies.

A request was received from the INTERNATIONAL JOURNAL OF ORTHODONTIA AND ORAL SURGERY that it be made the official organ of our Society. Also during this period a custom was established which has remained unbroken throughout the years—that of having the retiring President serve on the Board of Censors for the three ensuing years following his term of office.

During the Society's second year meetings were held on October 11 and December 13, 1922, and on March 14, 1923, President Herbert A. Pullen presiding. The first Advisory Committee was appointed, comprising Henry Clay Ferris, John V. Mershon, Frederick L. Stanton, Chairman. A request was received from the New York State Dental Society asking that the New York Society of Orthodontists present a group of clinics at their next meeting. This was done. The first honorary member of the Society was elected—Dr. William K. Gregory, Professor of Vertebrate Palaeontology, Columbia University, and Curator of the Department of Comparative Anatomy and Fishes, American Museum of Natural History, New York City.

The original Constitution and By-laws required exclusive practice as a qualification for membership. On March 14, 1923, an amendment to Article 3 (Membership) Section 2 was passed to read as follows: "The practice of Orthodontia shall be interpreted to mean that the applicant is devoting 75 per cent of his (or her) time to the treatment of malocclusions of the teeth for a period of not less than two years."

The fall, midwinter and annual meetings held respectively on November 7 and December 12, 1923, and February 27, 1924, were presided over by President C. W. B. Wheeler.

At this time the metallurgic problem was in a complex state and was eliciting real anxiety. Manufacturers of orthodontic materials and others were being consulted on matters of heat treatment and tests to note the changes in the different alloys under similar and varying conditions.

The first standing resolution was introduced by Martin Dewey, condemning the practice of patenting mechanical devices, appliances, or instruments, as being detrimental to the advancement of orthodontics.

The only special meeting ever called was held on Friday afternoon and evening, April 4, 1924, when the entire program was given over to Dr. Paul Simon of Berlin, Germany, who presented his work on Gnathostatic Diagnosis.

The fall, midwinter, and annual meetings held on October 8 and December 10, 1924, and March 11, 1925, were presided over by President Henry C. Ferris. Upon retiring from office, President Ferris read the first President's Address. This marked the establishment of a custom which was later prescribed in the Constitution and By-laws.

It fell to my lot as your humble servant to receive the honor of presiding as President of the Society during the meetings held on October 28 and December 9, 1925, and March 10, 1926.

Dr. Ferris reported that at the meeting of the American Society of Orthodontists in Atlanta in April, 1925, he had had the pleasure of presenting a watch to William C. Fisher which bore the inscription, "Presented to Dr. William C. Fisher by the New York Society of Orthodontists in appreciation of his services to Orthodontia. March 11, 1925."

Walter H. Ellis, in behalf of the out-of-town members suggested a change in the program to an all-day meeting, so as to leave the evenings free. This was referred to the Executive Committee, and the plan was later adopted.

The death of C. W. B. Wheeler, one of the Founders of the Society and its third President, occurred on August 14, 1926.

The fall, midwinter, and annual meetings held on October 27 and December 8, 1926, and March 9, 1927, were presided over by President John V. Mershon. Dr. J. Lowe Young suggested that the Society should assist in the publication of a research report by Drs. Milo Hellman and William K. Gregory entitled "The Dentition of Dryopithecus and the Origin of Man." The members of the New York Society of Orthodontists made personal subscriptions totaling $550, for this purpose.

The Advisory Committee recommended the routine use of radiography before treatment for clinical information and legal protection; also that indemnity insurance be carried by members.

It was announced at the close of the March meeting that the fall meeting set for October 26, 1927, would be cancelled on account of conflict with the meeting of the American Dental Association in Detroit.

The midwinter meeting held December 14, 1927, and the annual meeting held on March 14, 1928, were presided over by President Leuman M. Waugh. Our membership at this point was 103, with 22 applications on hand. The treasury showed a balance of $1,679, with a reserve of $2,000 in Liberty Bonds.

Dr. H. B. Hamilton of Ithaca tendered his resignation because of failing health. In acceptance, with regret and sympathy, Dr. Mershon moved that all of the courtesies within the gift of the Society be extended to Dr. Hamilton.

An amendment to Article 3 of the Constitution and By-laws was passed 36 to 3, to the effect that, "No person shall be eligible to active membership except those engaged in the exclusive practice of orthodontia for a period of not less than two years."

A motion was also passed that all endorsements of applications for membership should in the future be accompanied by a letter of recommendation.

President Frank A. Delabarre presided over the meetings held on October 24 and December 12, 1928, and March 20, 1929. The fall meeting, held at the University Club, Boston, Mass., was the first and only meeting to be held outside of the city of New York. Dr. George C. Ainsworth of Boston, Mass., in recognition of his contributions to orthodontics was made an Honorary Member.

It is interesting to note the following paper from one of the scientific programs of this year: "Radiographic Study of the Temporo-mandibular Joint Showing Changes in the Condylar Region During Development," by Martin Dewey and Sidney E. Riesner. This work was considered one of the real scientific contributions of that period and has since been expanded to great practical value by President-elect Sidney E. Riesner.

The death of Dr. Victor Hugo Jackson on January 29, 1929, was reported. Dr. Jackson's death concluded a brilliant career in orthodontics which had covered a period of half a century. His development of the Jackson system of appliances was a definite contribution in the evolution of modern methods.

One of our staunch and beloved members, Dr. George B. Palmer died November 3, 1929, and Dr. H. B. Hamilton after a long illness passed away on November 12, 1929.

In his President's Address, Dr. Delabarre recommended that the several sectional societies in the United States should become components of the American Society of Orthodontists under a plan similar to that of the American Dental Association. This matter was referred to the Board of Censors and the Advisory Committee to be reported on at a later meeting.

Owing to the death of President Charles A. Hawley on July 20, 1929, the office of President remained vacant for the year in honor to his memory, and the meetings of October 14 and December 11, 1929, and March 12, 1930, were presided over by William C. Fisher as President-elect.

It was voted to hold two one-day meetings a year instead of three. The Society voted to send $10 per member for the support of the Second International Orthodontic Congress, and a check for $1330 was sent to the Treasurer of the Congress.

The death of Dr. Edward H. Angle on August 11, 1930, was reported and received with deeply felt regrets.

It was stated that Dr. Hamilton had left $500 in his will to the New York Society of Orthodontists in appreciation for the assistance he had received from the membership during his illness.

President William C. Fisher presided at the fall meeting on November 24, 1930, and at the annual meeting on March 11, 1931. Resolutions were passed

converting the $500 left to the Society by Dr. Hamilton into a relief fund. In admiration of his heroism, gratitude, and example, this was to be known as the Hamilton Fund, and with other contributions would be used in the further relief of suffering among members.

In his President's Address, Dr. Fisher reviewed the first ten years of the Society's existence.

The fall meeting held on November 11, 1931, and the annual meeting on March 9 and 10, 1932, were presided over by President Charles A. Spahn.

Dr. Waugh reported the death of Dr. J. Lowe Young on May 3, 1931. He was one of the Founders of the Society, the first President, a most staunch supporter and beloved member. Dr. Waugh's references as they appeared in the records were very beautiful, as he paid fitting tribute to one who had meant so much to us all.

Dr. Barber, reporting for the Executive Committee, stated that they had considerably more material on hand than they were able to use at this meeting. He suggested a discussion as to the advisability of foregoing the December meeting and holding a two-day meeting in March. After much discussion Dr. Dewey made a motion to this effect, which was carried.

Thus it was that the annual meeting on March 9 and 10, 1932, became the first two-day meeting of the Society.

On the evening of March 9, 1932, a dinner was given to Milo Hellman, John V. Mershon, and William C. Fisher. The following addresses were made:

Milo Hellman, The Scientist - - - - - - William K. Gregory
John V. Mershon, The Clinician - - - - Harry E. Kelsey
William C. Fisher, The Administrator. - E. P. R. Ryan

President Lourie J. Porter presided at the meetings held November 14 and 15, 1932, and March 13 and 14, 1933.

The death of William C. Fisher on October 14, 1932, was reported. It was Dr. Fisher who had first thought of organizing the New York Society of Orthodontists. It was he who had invited the Founders together. In his devotion to the Society he served as secretary-treasurer the first eight years, except in 1926 when he was President-General of the First International Orthodontic Congress, which was also a result of his original ideas.

At Dr. Dewey's suggestion a letter of congratulation was sent to Dr. H. A. Baker of Boston on the occasion of his eighty-fourth birthday. Dr. Baker was well known as having devised the Baker intermaxillary system of anchorage.

The office of Editor was created—to be elected annually.

The fall meeting November 20 and 21, 1933, and the annual meeting April 9 and 10, 1934, were presided over by President Harry E. Kelsey.

The sudden death of Martin Dewey on May 14, 1933, was reported. As a student, teacher, and writer he was unexcelled. At society organization and administration he was a master. As one of the most brilliant-minded and outstanding characters in organized dentistry he terminated his remarkable career as the President of the American Dental Association.

At the fall meeting Article 7 of the Constitution and By-laws was changed, designating the Board of Censors as the Nominating Committee.

President Kelsey recommended a plan in which all the recognized sectional orthodontic societies should become components of the American Society of Orthodontists.

Memorial resolutions were read to the memories of Chauncey M. E. Egel and Leonard M. Gunton.

President Frederic T. Murlless, Jr., presided at the meetings held November 12 and 13, 1934, and May 2, 1935. There was no scientific program at the May meeting on account of an American Society of Orthodontists meeting in New York. A sum of $1,000 was voted as a contribution to the American Society of Orthodontists meeting, allowing thirty-five of our members, not members of the American Society, to register free.

Resolutions were read to the memory of Dr. Herbert A. Pullen, a Charter member and second President of the Society.

The fall meeting, November 18 and 19, 1935, and the annual meeting March 23 and 24, 1936, were presided over by President Fred R. Blumenthal.

The committee appointed to adapt our Constitution and By-laws to become a component of the American Association of Orthodontists comprised the following men, George S. Callaway, E. Santley Butler, Franklin A. Squires, Chairman.

President Henry U. Barber, Jr., presided at the meetings held November 23 and 24, 1936, and March 15 and 16, 1937.

Dr. Waugh reporting for the Advisory Committee stated that they recommended the appointment of a Public Information Committee. President Barber appointed a committee of nine members to cover the geographic confines of the Society. Frank A. Nicolai was made chairman, and $2000 was appropriated for the expenses for one year. Mr. Dwight Anderson, Director of the Public Relations Bureau of the Medical Society of the State of New York, was made Director.

President Albert A. Crosby presided at the meeting held November 15 and 16, 1937, but owing to his illness, president-elect Alfred P. Rogers presided at the annual meeting March 7 and 8, 1938.

After a year of fruitful work an additional $300 was voted to carry on the Public Information Committee until the next meeting of the American Association of Orthodontists, when it would be proposed that this work should be converted over into a national endeavor. According to changes in the Constitution and By-laws two new offices were created, Vice-president, and Director-with-Alternate to represent the Society at the American Association of Orthodontists business meetings.

Memorial resolutions were read to the memory of Henry Clay Ferris, a Founder of the Society, whose death occurred November 10, 1937.

It was voted to recommend that the Public Information Bureau should be transferred to the American Association of Orthodontists in order that it should be properly operated as a national program.

President Alfred P. Rogers presided at the fall meeting October 31 and November 1, 1938, and at the annual meeting March 13 and 14, 1939.

Resolutions were read to the memory of Frank A. Gough, William H. Gilpatrick, and Frank A. Delabarre. Dr. Delabarre was one of our Past Presidents,

and was President-elect of the American Association of Othodontists at the time of his death.

The Constitution and By-laws were amended to create an Associate Membership with eligibility defined.

Resolutions were read to the memory of Dr. Albert A. Crosby, our immediate past-president, who died November 11, 1939.

The fall meeting November 13 and 14, 1939 and the annual meeting March 11 and 12, 1940, were presided over by President Franklin A. Squires.

It was announced that the Public Information Committee of the New York Society of Orthodontists (under the name of the Public Relations Bureau) had been taken over by the American Association of Orthodontists. Frank A. Nicolai was appointed a member of the Bureau and was to serve as Chairman of a Board of Directors of the Bureau to be composed of eight local members of the American Association of Orthodontists to serve as a working committee.

Resolutions were read to the memories of Ransford Van Gieson, Percy R. Ashplant, and Harry T. Dean.

. . . . . .

This meeting now in progress is being presided over by our President Glenn F. Young. It was he who conceived of the plan for commemorating this twentieth anniversary, and the preparations have been made under his personal direction. It is of significant interest to note that our Twentieth President is the nephew of our First President, Dr. J. Lowe Young, at whose death Dr. Waugh in his eulogy stated, "When I looked at him I kind of said 'there is the Abraham Lincoln of Orthodontia'." Dr. Glenn F. Young has always shown the same inherent ruggedness, ever ready to defend the principles and cause of all that is just and right as he sees them. He has been an ardent worker, and the honor he has received comes as a just reward for years of energetic and devoted service to the Society as a member of the Executive Committee and as secretary-treasurer. His record should inspire the many younger men who are destined to assume the responsibilities of this Society in the future, for he is an example they may well afford to follow.

The New York Society of Orthodontists has given eight Presidents to the American Association of Orthodontists, including the present incumbent, President Henry U. Barber, Jr., and three national meetings will have been held here inclusive of the meeting next spring. The two meetings of the American society held here in New York were outstanding in many ways and were epochal in its history.

In 1926, William C. Fisher, then President of the American Society of Orthodontists, converted the meeting into the First International Orthodontic Congress, over which he presided as President-General.

In 1935, Leuman M. Waugh presided as President over the thirty-fourth annual meeting of the American Society of Orthodontists which was held in this city. At that time President Waugh submitted a plan, including a proposed Constitution and By-laws for the reorganization of the American Society of Orthodontists on a National basis. The result of Dr. Waugh's recommendations

was the formation of the American Association of Orthodontists, with seven Sectional Societies, covering the United States and Canada, as component parts as follows:

The Pacific Coast Society	organized in 1913 with Robert Dunn of San Francisco first president
The Southwestern Society	organized in 1920 with T. O. Gorman of San Antonio first president
The Rocky Mountain Society	organized in 1920 with Albert H. Ketcham first president
The New York Society	organized in 1921 with J. Lowe Young first president
The Southern Society	organized in 1921 with C. C. Howard of Atlanta first president
The Great Lakes Society	organized in 1925 with Walter S. Sargent of Toledo first president
The Central Society	organized in 1938 with Max E. Ernst of St. Paul first president

As an example of the liberal policies of the New York Society, it is of interest to record that in this new organization they only asked for and received equal representation with all of the other sectional societies. This plan was obvious, because it was realized that the differences in orthodontic problems vary much more in different communities and sections than they do at points of concentrated numbers. The Society has recognized that all sectional components have their own distinct problems, and has always been sympathetic and cooperative in its attitude toward them.

The Secretary-Treasurers of the New York Society of Orthodontists have served as follows:

William C. Fisher	Oct., 1921,	to	Oct., 1925—	12 meetings
Chas. A. Spahn	Oct., 1925,	to	Dec., 1927—	6 meetings
William C. Fisher	Dec., 1927,	to	Oct., 1929—	5 meetings
Lourie J. Porter	Oct., 1929,	to	Nov., 1931—	5 meetings
Franklin A. Squires	Nov., 1931,	to	Nov., 1937—	12 meetings
Glenn F. Young	Nov., 1937,	to	Nov., 1939—	4 meetings
William C. Keller	Nov., 1939,	to	date -------	2 meetings

It is manifest throughout all of the records of the Society that these men went about their work with keen interest and thoroughness. This is attested by the soundness of our financial resources. The thrift with which the Society's funds have been managed was established by the first secretary-treasurer, and has been carried on traditionally by the officers and executive committees through the successive years.

The work which has been accomplished by the twenty Executive Committees is one of the mediums by which the success and many of the accomplishments of the Society can be measured. The names of these men would be too numerous to list here, but with few exceptions they have accepted the responsibilities imposed and have gone about their tasks with an energy and enthusiasm, which has by now become a tradition among them.

The ad-interim authority these men have had to assume for the protection and development of the Society's interests has always been constructively used. A search through the programs of the meetings will reveal the volume and quality of the scientific, practical, and correlated material they have presented as follows:

Papers on Orthodontic subjects (scientific and practical about equally divided)		132
Miscellaneous papers		43
Papers on Nutrition		11
Papers on Metallurgy		6
Papers on Pediatrics		5
Papers on Educational subjects		4
Papers on Office Administration		3
Papers on Endocrinology		2
Papers on Speech		2
Total papers read before the Society		208
Clinics	185	
Case Reports	76	

To have disseminated this material throughout our membership and into the orthodontic literature of our time is the contribution of these Executive Committees, to which the Society can justly point with pride.

Since the Society has been holding four days of scientific sessions per year, and since the creation of the office of Editor, the published scientific material of the Society has frequently equalled in volume that of the American Association of Orthodontists annually, with the exception of clinics.

The Board of Censors of the New York Society of Orthodontists has always upheld the highest requirements for membership, and has used extreme care in the investigation and approval of applicants before recommending them to the vote of the Society. In this work, and in the annual auditing of the accounts, this Board has stood for the finest protection. In the performance of the duties of a nominating committee it must use that degree of foresight in the recommendation of officer material which will measure up to the highest requirements.

The minutes record the appointment of many special committees, whose duty it has been to deal with a succession and variety of problems from time to time. Their invariable record is the sign that before these committees have reported back to the Society or finally discharged their duties the same interest was manifested by them as is characteristic of the regular committees.

The Society has held forty-six regular meetings to date. There were four meetings in 1922. This was changed to three meetings a year beginning with 1923 and ending in 1929. The arrangement to hold two meetings a year was established in 1930 and the first two-day meeting was held on March 9 and 10, 1932, Charles A. Spahn presiding.

Eighteen meetings were held at the Vanderbilt Hotel from December 1921 to March, 1927. Two meetings were held at the Commodore Hotel in 1927 and 1928. The only meeting held outside of New York City was at the University Club, Boston, Mass., October, 1928. The next meeting was held at the Roosevelt Hotel, December, 1928, and the next eight meetings were held at the Commo-

dore Hotel, through March, 1932. The Society then moved to the Waldorf-Astoria for the November 14 and 15 meetings in 1932, and fifteen meetings have been held there up to this date.

At present the Society has a total of two hundred and twelve members, of which there are one hundred and ninety-eight regular members, twelve associate members and two honorary members. It is interesting to note that the New York Society of Orthodontists is larger than the American Society of Orthodontists was when we were organized, and that our Society represents close to one-third of the membership of the American Association of Orthodontists today.

According to Article II of the Constitution: "The objects of this Society shall be to advance the science and art of orthodontics; to encourage and sponsor research; to strive for higher standards of excellence in orthodontic instruction; to contribute its part in dental health service; and to promote fraternal relationship among its members."

In the procurement of programs as in all other matters the records show the great effort which has been made to present the foremost scientific, practical and correlated subjects of the day. With the availability of material in this section of the country, it may truthfully be said that our literature has contributed largely to the record of the progress of orthodontic science and practice during the lifetime of the Society. The Society has also contributed financially to research and encouraged such work whenever possible.

To quote again from Dr. Angle. . . . "Orthodontia is a great science by itself, with requirements in its study and practice so radically unlike that of the other branches of dentistry that the two can never be properly combined either in study or practice." This is a fact which should be emphasized as much or more today than ever before. It should be the stimulus which will inspire the highest ideals and condemn any member in this Society who would be satisfied with less. It is for the many reasons born of this fact that the Society has endeavored to discourage all forms of inadequate teaching which do not make for proper preparation to embrace the practice of orthodontics.

One of the finest objects the Society has fulfilled is the good fellowship which has been established among its members. This has promoted a better understanding of many problems and offered opportunities for their solution, thus making for progress and service.

In the matter of selection of officers and committeemen the Society gradually has evolved a plan best suited to its own requirements. It will be noted that many of the presidents have been men whose records proved them to be well-established leaders. Others have been made president after several years of committee assignments, or as secretary-treasurer. The plan that each retiring president is placed on the Board of Censors for three years assures at least four years of service from these officers—many of them have served much longer. This preserves a continuity which always provides for a certain percentage of officers who are seasoned in the handling of the duties and affairs of the Society.

The Society has always been managed on sound principles of administration and the concentration of devoted service and interest on the part of all

who have had responsibilities to discharge. The way has not always been easy, conditions have presented themselves and problems have arisen, but through kindness (sometimes firmly applied) there has always been a satisfactory solution. The Society was exceedingly fortunate during its formative years to have among its members men of established record for leadership who gave freely of their time and experience.

More and more will it become necessary to train officer material from within our membership. If these men will only set about their work in the same spirit, learn to emulate and carry on the traditions of those who have gone before them, then surely the Society will remain secure and free from disintegrative influences.

The confidence, trust, and cooperation with which the membership has always supported their officers have been just as important in our successful growth. Through all of the various age groups among our membership can be found men of unselfish and lofty ideals, in whom we can repose our security with complete faith. Through the pursuit of the highest motives, without favoritism or prejudice, the New York Society of Orthodontists has grown gradually in strength into the institution it is today. It seems safe to say that if the same policies are followed faithfully, we should be well prepared for the eventualities of the future.

A more extended history of these first twenty years would be very interesting, but much too extensive to present here today. It has been necessary to experiment with several changes in style to find a plan by which this period in our history could be covered within the allotted time.

It is particularly disappointing not to be able to include a review of some of the outstanding scientific and practical contributions from among the forty-six programs, but all this has been precluded on account of the limited time.

I wish to make acknowledgment to President Young for the uncounted hours we spent together searching through the minutes and programs and other reports of the Society. I wish especially to thank Secretary-Treasurer Keller for his most helpful cooperation in supplying the records of the Society at such times and places as requested.

REFERENCE

Weinberger, Bernard W.: Eighteen Years of the American Society of Orthodontists, read before the American Society of Orthodontists at the annual meeting in St. Louis, Mo., 1919, and published in the INTERNATIONAL JOURNAL OF ORTHODONTIA, ORAL SURGERY AND RADIOGRAPHY, 1921.

BIOGRAPHIC SKETCHES OF PAST-PRESIDENTS OF THE FIRST TWENTY YEARS, NEW YORK SOCIETY OF ORTHODONTISTS

LEUMAN M. WAUGH, NEW YORK, N. Y.

J. Lowe Young, First President, 1921-22, founder member, graduate Royal College of Dental Surgeons, Toronto, and Philadelphia Dental College 1890; second class of Angle School; serving later as an instructor. Moved to New York from Detroit, 1905. He was the second exclusive specialist in New York and the most outstanding of this period. Did much to inform dentists of the aims and purposes of orthodontics. Contributed to the literature of orthodontics and of dentistry. He was ruggedly honest and seemed to me the Abe Lincoln of orthodontics. His example and teachings have lived on, and much that we are enjoying now began with him. He was the first Professor of Orthodontics on the Columbia University Faculty of Dentistry. He felt unable to take on the responsibility of teaching because of the heavy demands of a busy practice, and nominated a successor and tendered his resignation when the first class entered in 1917. His three meetings were well attended and the papers and clinics of such outstanding quality and the interest of the members so keen that the future of the Society was assured.

Herbert A. Pullen, Buffalo, N. Y., Second President, 1922-23. Was graduated from University of Minnesota, 1893. Member of the first Angle group and served as an instructor for the following two classes. He was the first exclusive specialist in western New York. He contributed much to the literature. He wrote an important section on orthodontics in *Operative Dentistry,* edited by C. N. Johnson. He was Professor of Orthodontics in the University of Buffalo at the time of his passing.

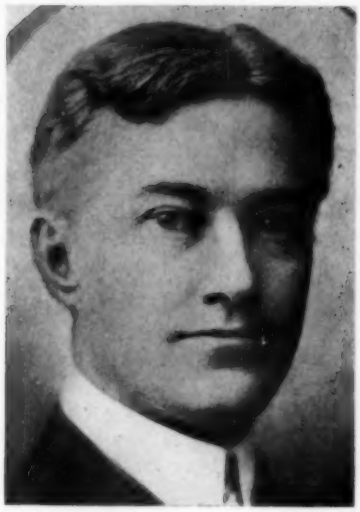
C. W. B. Wheeler, New York, Third President, 1923-24, founder member. His predental education was obtained in the High School, Hyde Park, N. Y. He was graduated in dentistry from the Philadelphia Dental College, 1895. He engaged in general dental practice in Elmira, N. Y., until 1906 when he moved to New York City and became associated with Dr. V. H. Jackson in the practice of orthodontics. In 1909 he entered independent practice. He was a quiet, unassuming, busy orthodontist who conducted his practice in a very systematic way. He contributed an important paper on office management and designed a number of charts for both the business and treatment records in orthodontic practice. He was the preceptor of several of our active members, among them Doctors George H. Caddick, Lowrie J. Porter, and Augustus Holt.

Henry Clay Ferris, New York, Fourth President, 1924-25, founder member. Preparatory education Bordentown Military Institute, Bordentown, N. J. He was graduated from New York University Dental School, 1892. Graduated from the Angle School in 1906. He had been in general practice in Brooklyn, and after finishing in the Angle School, confined his efforts to orthodontics, and moved to Manhattan a few years later. He had a bent for research, the saliva engaging his attention for a number of years.

Joseph D. Eby, New York, N. Y., Fifth President, 1925-26, founder member. Predental education was obtained in the High School, Nevada, Mo., and the Peacock Preparatory School, Atlanta, Ga. He was graduated from the Atlanta-Southern Dental College, 1908. Notable in the early years of his career was the long association in the office of Dr. Thomas P. Hinman, Atlanta, Ga., where he began the practice of orthodontics. From September, 1917, to January, 1921, he served in the Dental Corps of the U. S. Army with the rank of Major. Inclusive in his service was a course in maxillo-facial surgery. He was instructor in the Dental Battalion in Camp Greenleaf, Georgia. After the Armistice, he was stationed at Walter Reed Hospital, Washington, D. C., devoting most of his energy to the treatment of maxillo-facial wounds. Subsequent to his discharge from the Army, he moved to New York to enter the practice of orthodontics.

The portrait of each past-president was shown on a screen as his biographic sketch was read.

J. Lowe Young



Herbert A. Pullen

C. W. B. Wheeler

Henry Clay Ferris

He was elected to the first editorship of our Society, serving from 1933 to 1939. During his incumbency, our proceedings have been well prepared and regularly published in our official Journal. He feels that the outstanding contribution of his presidency was two good scientific programs and much preparation by the New York Society of Orthodontists for the first Orthodontic Congress held the following year. He has contributed to the literature, served ably as associate editor of the AMERICAN JOURNAL OF ORTHODONTICS AND ORAL SURGERY and has served continuously in various capacities aiding progress in orthodontics.

John V. Mershon, Philadelphia, Sixth President, 1926-27. Predental education at Model School, Trenton, N. J. He was graduated from Pennsylvania College of Dental Surgery, 1889—later merged with the University of Pennsylvania in which he served as Professor of Orthodontics for a number of years. His contributions to orthodontics have been so generous and important, and therefore so well known that comment would be superfluous. I feel safe in saying that no orthodontist has taught a greater number of orthodontists or done so more generously than has Doctor Mershon and to no one of our members are we more grateful. He was awarded the honorary degree of Doctor of Science by the University of Pennsylvania and was the first recipient of the Albert H. Ketcham Memorial Medal for his outstanding contributions to orthodontics.

Leuman M. Waugh, New York, Seventh President, 1927-28, founder member. Predental education High School and the King Seminary, Rochester, N. Y. He was graduated from the Dental Department, University of Buffalo, 1900. He joined his father in general dentistry in Rochester, N. Y., but soon accepted a teaching position in the University of Buffalo, Dental Department, and took up the study of histology, embryology, and pathology in the Medical School. He was made Professor of Histology, and Embryology in 1902 and Professor of Pathology in 1908, devoting half time to a mixed dental and orthodontic practice. He moved to New York and entered into exclusive practice in 1914, and in 1916 he was invited by Columbia University to be a member of a committee looking to the organization of a school of dentistry. He was honored with the Professorship of Embryology and Histology, and later of Special Pathology. He was relieved of these Chairs and appointed Professor of Orthodontics upon admission of the first class of dental students in 1917. He was also appointed Director of the Orthodontic Clinic on the organization of the Graduate Division of Orthodontics in 1926. The most outstanding event during his tenure of office was a course given by John V. Mershon. Doctor Waugh was concerned about the many varieties of appliances that prevailed the country over and especially the heterogenous types in vogue within the membership of this Society. To the end that a simplified and more uniform basal technique be spread among the members, he asked Doctor Mershon if he would give a course in the principles of treatment underlying the technique he used and if he would put the class through the actual making of the types of appliances. After telling Doctor Mershon that the facilities of the Orthodontic Department at Columbia would be made available to him, he promised to think it over seriously. He not only consented but would make no charge for doing it because it was for his fellow members in the New York Society of Orthodontists. Some forty members embraced the opportunity. The enthusiasm and gratitude were most satisfactory. From this effort in University Extension in orthodontics first made anywhere, has grown in the fourteen years since that time, a demand that has resulted in fourteen classes embracing a variety of subjects given by leading teachers which have had a total enrollment of three hundred orthodontists from thirty-nine states and three foreign countries, and the demand continues and further courses are in the making.

Frank A. Delabarre, Boston, Mass., Eighth President, 1928-29. Born Conway, Mass. Predental education Lowry and Goff English and Classical High School, Providence, R. I., and Amherst College from which he received the degree of Bachelor of Science. Was graduated in dentistry from the University of Pennsylvania, 1894, and in medicine in 1895. His was a most successful year. One of the meetings was held in the University Club, Boston, The special feature of the meeting was an illustrated lecture on Eskimo dentition by Dr. Vilhjalmur Steffansen. All present joined in a most hearty

JOSEPH D. EBY

JOHN V. MERSHON

LEUMAN M. WAUGH

FRANK A. DELABARRE

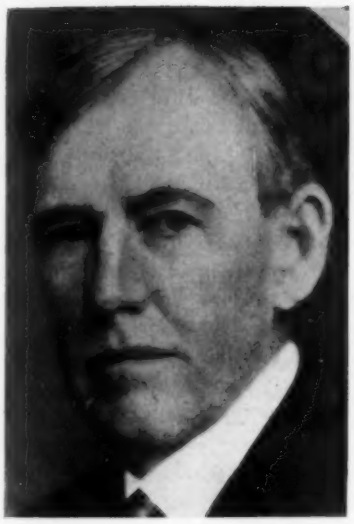
vote of thanks to Dr. Delabarre and his local committee for a most unusual and enjoyable meeting. Doctor Delabarre was always forward-looking and his ethical concepts were of the highest. He was deeply interested in prevention and labored persistently for this cause. He was Assistant Professor of Orthodontics at Tufts Dental College 1907 to 1918; Chief of Orthodontic Staff at Forsyth Dental Infirmary for Children; Director of Post-Graduate School of Orthodontics at Forsyth and lecturer at Harvard Dental School. At the time of his passing, he was president-elect of the American Association of Orthodontists.

Charles A. Hawley, Washington, D. C., Ninth President, 1929-30. Predental education High School, Columbus, Ohio, and three years Ohio State University. He was graduated in dentistry from the University of Michigan, 1893. Took the Angle course. Was the pioneer orthodontist in the District of Columbia, specializing in 1904. Always a serious student. Studied the dentitions in the National Museum and made computations and designed the Hawley charts, a very helpful adjunct in diagnosis and classification. These seem to be more appreciated and used today than they were a decade ago. The so-called "Hawley Bite Plate" was first advocated by him. This also is now much more widely used than in Doctor Hawley's time and bids fair to become a permanent factor in orthodontic treatment.

William C. Fisher, New York, Tenth President, 1930-31, founder member, first secretary. Predental education High School, Washington, D. C. Was graduated from George Washington University Dental School, 1899. He continued his dental education at McGill University, Montreal, Canada, and at the University of Dublin, Ireland. He was in general practice in London, England, for two years, returning to take competitive examinations for admission to the newly authorized dental corps of the U. S. Army. He was successful and became an officer of the original Dental Corps of thirty contract dental surgeons. After three years of service, he resigned and entered upon dental practice in New York. He was always deeply interested in orthodontics and attended many consecutive meetings of the American Society of Orthodontists. To him, must be given credit for having called together some nine New York orthodontists for a conference to consider the organization of the New York Society of Orthodontists, November, 1920. The hearty accord of those present very soon culminated in the formation of this Society. He was President of the American Association of Orthodontists in 1925 and presented his plan for the First International Orthodontic Congress. It was held in conjunction with this Society in 1926. The Second Congress was held in London, 1931. Shortly before the Congress convened, Doctor Fisher contracted pneumonia in London. Returning to his home, a prolonged illness followed, from which he did not recover. This Society and the specialty generally are indebted to Doctor Fisher for his successful efforts in the promotion of orthodontic organization.

Charles A. Spahn, Newark, N. J., Eleventh President, 1931-32. Predental education was obtained under private tutors. He was graduated in dentistry from the University of Maryland, 1903. During his regime as president, the by-laws were given much study and important changes and additions made. The periods of our Society meetings were changed from four one-day meetings to two meetings of two days each per year, the first being held in March, 1932. This was done principally for the convenience of our out-of-town members and has proved a genuine success. Doctor Spahn gives credit for this change to Doctor Barber who was Chairman of the Executive Committee at that time. In addition to meetings of a high order, Doctor Spahn prepared a letter which he read as his President's address which also contained recommendations for correction of many misunderstood problems that arise during orthodontic treatment with the hope that our members would continue with the study of the recommendations and in this manner write essays pertaining thereto, and thus promote a better understanding with the parents of our patients, and the dentists, physicians, and friends who refer them to us for treatment. It also contained the recommendation that many more consultations be held among orthodontists regarding cases under treatment.

Lowrie J. Porter, New York, Twelfth President, 1932-33. Predental education obtained in the Central High School, Grand Rapids, Mich. He was graduated from the University



CHARLES A. HAWLEY

WILLIAM C. FISHER

CHARLES A. SPAHN

LOWRIE J. PORTER

of Michigan, 1918. It was during Doctor Porter's presidency that our first meeting was held in the Waldorf-Astoria Hotel. This was a most satisfactory change. An enlivened effort was made to enlist papers from outstanding specialists in medicine whose field parallels orthodontics. He recommended that an editor be added to our officers to be elected annually. The creation of this office resulted in regular publication of our proceedings in the official organ. Two very successful meetings of two days each were held and the body voted the permanent adoption of this plan.

Harry E. Kelsey, Baltimore, Md., Thirteenth President, 1933-34. He was graduated from the Baltimore College of Dental Surgery, 1896. During his presidency, he emphasized the harm being done by the "absurd and misleading advertisements of appliance laboratories." Also during his term of office, this Society passed the Resolution disapproving the continuance of the short-term proprietary courses in orthodontics. He says: "I regard as of the utmost significance the steady, patient, and thorough endeavor freely given by members and committeemen of the New York Society of Orthodontists and the then American Society of Orthodontists which culminated so successfully." Throughout a long and successful professional career, he has always been identified in the front ranks of organized dentistry and of orthodontic societies. He is now serving on the Research Commission of the American Dental Association and has the distinction of being President of the American Board of Orthodontics.

Frederic T. Murlless, Jr., Hartford, Conn., Fourteenth President, 1934-35. Predental education obtained in Suffield High School, Suffield, Conn. Graduated from the New York College of Dentistry—now affiliated with New York University—1892. Doctor Murlless writes of his presidential year as follows: "At the November meeting in 1934 two papers of great value and far-reaching influence on the structure and functional reactions of the temporo-maxillary articulation were presented by Doctor Rogers and Doctor Riesner. The meeting in the spring of 1935 was held in conjunction with the American Society of Orthodontists. We had for our guests many orthodontists prominent throughout the country. The program given in the name of the American Society was largely furnished by the members of this Society who were also members of the American Society. Notable among these was the group educational clinic on gnathostatic diagnosis. This was the occasion which, without doubt, marked the acceptance of gnathostatics as a positive resource in orthodontic diagnosis, . . . There is much that deserves to be said in praise of the Society because of the constant worth of its programs, though their high level makes it difficult to single out instances for especial notice. Ours has been a happy, harmonious, progressive society, ever giving fresh proof of its recognized leadership. We certainly have reason to be proud." Doctor Murlless has not only graced our Society by loyal attendance but has faithfully served in many capacities of responsibility and trust. He is now serving as a member of the American Board of Orthodontics.

Fred R. Blumenthal, Boston, Mass., Fifteenth President, 1935-36. Predental education done in High School, Dorchester, Mass. He was graduated from Harvard University Dental School, 1915. Doctor Blumenthal's year as President was notable for the following: "(a) Emphasis was placed on the importance of the recognition of early manifestations of malocclusion and the advisability of early or delayed treatment. (b) Coordination of the role of the orthodontist with that of other specialists in the dental field, such as oral surgery and prosthodontia. (c) An effort was made to give the younger members of the Society an opportunity to appear on the program even though their presentations might seem elementary to the older members. This procedure instilled confidence in the younger men and trained them for future essayists. This proved very successful." He is Assistant Professor of Orthodontia and Director of Graduate Course in the Dental School of Harvard University. Doctor Blumenthal has served the Society in many committee assignments, invariably giving of his best to the work.

Henry U. Barber, Jr., New York, Sixteenth President, 1936-37. Predental education High School, Glens Falls, N. Y. He was graduated in dentistry from University of Pennsylvania, 1916. Studied in the Jarman Post-Graduate School in Philadelphia. Became

HARRY E. KELSEY

FREDERIC T. MURLLESS, JR.

FRED R. BLUMENTHAL

HENRY U. BARBER, JR.

associated in orthodontics with L. M. Waugh in October, 1921. He became a member of the original orthodontic staff at Columbia University in 1922 and has served continuously, and is now an Assistant Professor. Outstanding during his regime was the official sanction of the Public Relations Committee and allocation of a substantial fund for the work of this Committee. He has served through nearly all offices with unvarying devotion and efficiency. He is now President of the American Association of Orthodontists.

Albert W. Crosby, Hartford, Conn., Seventeenth President, 1937-38. Predental education High School, Hartford, Conn. Was graduated in dentistry from the New York College of Dentistry (now New York University), 1892. He and Doctors Murlless and Ferris were classmates. He was a graduate of the Angle School and was in exclusive practice over forty years. He was a true pioneer who was at all times forward-looking and progressive. He served as a member of the American Board of Orthodontics until the time of his passing. He is affectionately remembered as a kindly, spiritual, progressive professional gentleman whom we may all do well to emulate.

Alfred P. Rogers, Boston, Mass., Eighteenth President, 1938-39. Predental education obtained in Acadia College, Nova Scotia, Canada. He was graduated from the Pennsylvania College of Dental Surgery (now affiliated with the University of Pennsylvania), 1896. He is a graduate of the Angle School. Doctor Rogers says, "The most outstanding contribution during my presidency was the work done by the Public Relations Committee. It reached the peak of its endeavor exhibiting rare wisdom in its approach to a difficult problem. The programs during my administration were of a high order due to the efficient and patient work of the Executive Committee. Other noticeable advances were to be seen in an increasing cordiality among the members and a growing appreciation of the value of higher education in orthodontics." Doctor Rogers has always been the exemplification of the finer things in professional life. His President's address was a masterpiece in the portrayal of the ethical and I urge its reading by all. It was published in the July, 1939, number of the AMERICAN JOURNAL OF ORTHODONTICS AND ORAL SURGERY. He has contributed much to the literature, outstanding are his essays on myofunctional therapy. He has received many honors, among them the M.A. degree from Acadia University, and the Albert H. Ketcham Medal from the American Board of Orthodontics.

Franklin A. Squires, White Plains, N. Y., Nineteenth President, 1939-40. Predental education obtained in Morris High School, New York City. He was graduated from New York College of Dentistry, 1918. Served as secretary-treasurer from 1931 to 1937, as well as on all the committees. He was well prepared for the presidency which office he filled with conspicuous success. Took a keen and telling interest in the abolition of the proprietary postgraduate courses in laboratory advertising, and in the regulation of the specialties. His loyalty to our Society is typical of his steadfastness of purpose in his devotion to professional progress. Having come up through the offices the long way, his honors were richly deserved and duties discharged with characteristic thoroughness.

Glenn F. Young, New York, Twentieth President, 1940-41. Predental education obtained in the Granite County High School, Phillipsburg, Mont. He was graduated from University of Michigan, 1924. Became associated with his uncle, J. Lowe Young, our first President. Therefore, the first and the last Presidents of the first score years in our history have been members of the same family and associates in the same practice, a truly unique occurrence. While Doctor Glenn Young is not, as yet, a past President, I must include him in the first twenty years of our history. I feel that this dinner and mark of respect to our founders and past Presidents, speaks much for his forethought and ability to plan for our progress. The entire program of this meeting is further evidence. I see in him many of the stalwart qualities of his illustrious uncle and shall follow his continuing success with much hope and deep satisfaction.

And, as we look upon the photos of our Presidents of the past two decades it seems fitting that we also say a cheering word to our President-elect who will soon be in office as

ALBERT W. CROSBY

ALFRED P. ROGERS

FRANKLIN A. SQUIRES

GLENN F. YOUNG

the first President of our third decade, President-elect Sidney Riesner (his portrait was projected on the screen). To him may I say just a few words in expression of the confidence that is felt by those who have striven to elevate our Society and our specialty to the highest possible level. May I be permitted to tell him that the important part he will soon be called upon to play gives us confidence for a continuance of progress, and finally, may I pledge abiding interest and support of the past Presidents and older members to the end that orthodontics may continue its efforts to improve the quality of its service to the children of man.

THE REPORT OF THE COMMITTEE ON ORTHODONTIC EDUCATION

A brief survey of orthodontic education the past five years shows certain developments. In 1935 the orthodontic curriculum survey report was published under the direction of the American Association of Dental Schools. This provided a comprehensive syllabus for orthodontic undergraduate study. The value of this work has been a subject of debate among teachers and orthodontists, chiefly because of its scope and recommendations. Inquiries and questionnaires, however, show that it met favorable reception in many schools, and, while not being followed as completely as was hoped for, it has served as a foundation and reference for course and lecture planning.

Awakened interest and gradual improvement in undergraduate courses is becoming more and more apparent. One of the greatest factors which has limited the expansion of educational programs has been the economic stresses of the past years. It has been exceedingly difficult for many universities to budget their regular curricular activities. Increases in teaching staff and the cost of additional equipment have been prohibitive. The attitude of many deans, however, toward increased programs of orthodontic education is extremely favorable and courses will be amplified as soon as additional funds are available. It should be encouraging to the profession that, for the most part, orthodontic clinics are not being commercialized to the extent that they are providing the funds for the operation of the departments. Courses in orthodontic education should be maintained by the university for teaching purposes and not be dependent upon clinical funds for operation.

Seven years ago the American Society of Orthodontists passed a resolution favoring the discontinuing of proprietary postgraduate courses of the short term variety. They endorsed courses designed and given under the direction of our dental colleges. Without any discredit upon courses given by privately owned schools (for in the past they have offered our best means for obtaining advanced training), the step was in the right direction. Little did we realize, however, the effect of a prolonged depression upon our ability to set up new courses in postgraduate and graduate instruction. It is said (and I feel with some truth) that adequate postcollege training in orthodontics has become increasingly difficult to obtain the last few years for the dentist desiring to take special instruction in our specialty. Few men can afford to discontinue practice for a year or so in order to take postgraduate or graduate work. Neither are graduates, in the majority of instances, prepared financially to continue their education.

To meet this difficulty, it seems highly desirable that schools, especially those located in large cities or in congested areas, set up a plan of postgraduate training, whereby one may spend half time each week for at least two years, thus allowing a man to continue general practice while advancing his education. Opportunity may be given for theoretical study as well as time for supervised clinical procedures. Several schools (especially those endowed) are formulating and inaugurating such courses at present. Refresher courses should also be available for the orthodontists, so that new methods and instruction may be given. Dental schools in the near future must assume a larger scope of instruction; they must continue an interest in the educational welfare of their graduates. Colleges have felt their relation and obligation to society complete with graduation. In the light of modern thinking, this is not true. The dental profession has been complacent, but the public now is demanding that the professions keep abreast of the times. It is not sufficient that one has satisfied a Board of Examiners twenty or thirty years ago. He must be progressive. In proof of this statement, I would refer you to the wonderful gift of the W. K. Kellogg Foundation Institute to the University of Michigan. They have a vision; a dream of more adequate dental health service for the people of their state. Dentistry must be constantly improved for the public, and to meet that need the Kellogg Foundation donated a building fully equipped with the most modern equipment for graduate and postgraduate work in all phases of dentistry. The experiment will be watched and in all probability copied by other agencies.

Graduate courses for the competent training of the specialist and teacher are generally regarded as necessary. The establishment of graduate courses has been somewhat slow, due to the fact that until recently many of our dental schools were not integral parts of universities. Graduate work leading to a Master of Science Degree must be carried in the graduate school of the university. Courses originating in the College of Dentistry regardless of whether a certificate of merit or attendance is given, are nothing more than postgraduate courses and are dependent upon the rating of the colleges and faculty for their prestige.

Greater opportunity for thorough training is presented in graduate work. Such courses are of sufficient duration to teach correlated sciences as well as demonstrate the practical procedures of the subject. The prerequisites for graduate work must be based upon an undergraduate course sufficiently comprehensive to permit of advanced work in the courses prescribed by the graduate school. From an educational standpoint it is difficult to understand how one can enter a graduate course unless he has majored in the subject as an undergraduate. Advanced assignments are not possible unless prerequisite studies have been completed. Regardless of our high ideals in orthodontic education, the number of men qualifying for practice with a graduate degree will for many years be relatively few. Time, money, and facilities for preparation will not permit many to avail themselves of graduate training.

It seems, as a logical conclusion, therefore, that at present the greatest service in orthodontic education can be provided: first, by improving our undergraduate courses in the fundamentals of orthodontic science; second, by establishing postgraduate courses sufficiently comprehensive to qualify one for practice—also providing refresher courses for the orthodontic practitioner; and third, by stimulating the student's interest in graduate work by careful preparation in undergraduate courses and informing the public of our needs so that endowments may be obtained to help provide these courses; and lastly, providing scholarships to assist the less fortunate students in obtaining an education of the highest order.

Respectfully submitted,

EARL G. JONES, Chairman
B. E. LISCHER
LELAND R. JOHNSON

NOTE: This report was adopted with the exception of that recommendation which would provide for a two-year postgraduate training on a half-time basis.

Department of Orthodontic Abstracts and Reviews

Edited by

DR. J. A. SALZMANN, NEW YORK CITY

All communications concerning further information about abstracted material and the acceptance of articles or books for consideration in this department should be addressed to Dr. J. A. Salzmann, 654 Madison Avenue, New York City.

Oral and Roentgenographic Aspects of the Teeth and Jaws of Juvenile Diabetics: By C. E. Rutledge, D.D.S., San Francisco, Calif. *J. A. D. A.* **27**: 1740, November, 1940.

Certain systemic conditions are accompanied by definite oral manifestations, which become evident before other clinical symptoms of the disease can be observed, as, for instance, scurvy and blood dyscrasias. It has long been suspected that endocrinopathies, in particular diabetes mellitus, are frequently associated with periodontosis.

The oral aspect in diabetes may be of great importance in early recognition of the disease. The outstanding symptom is a typical fruity odor of the breath, resembling decaying apples, new hay, or acetone and called "diabetic breath." Owing to the lowered general resistance of the diabetic patient, gums develop a tendency to hemorrhage, and as a result of this marginal gingivitis, which usually progresses, involving deeper parts of the periodontal tissue, the teeth become loosened. This leads to periodontosis and sometimes parodontal abscesses.

A most comprehensive report was submitted by Kent, who studied 5,000 diabetics and divided them into the following groups: (1) under 20, (2) from 20 to 50 and (3) over 50 years of age. A child, in group 1, who has been on a rigid diabetic diet during the years of tooth development is usually free from caries, but shows a marked tendency to tartar formation. The latter is true also of older persons. In appearance, the soft tissue is not unlike that of a normal healthy child. Patients in group 2 usually have many carious teeth showing marked resorption of alveolar bone structure, pocket formation and pus. The members of group 3 are largely edentulous. They usually report that the teeth loosened years before the diabetes had been diagnosed.

Many clinical descriptions can be found which state that the mucous membrane is deep red and very dry. The patient complains of a persistent thirst and constant burning. The tongue may be enlarged. It usually looks raw and red and shows enlargement of fissures. The teeth are usually coated with a soft light yellow tartar, which forms rapidly and is supposed to be due to acidosis. The large output of alkali through the urine is accompanied by a proportionately large output of calcium through the saliva, which causes a rapid formation of tartar.

Ersner states that 95 per cent of all patients with diabetes have caries and periodontosis. No local factor, such as overstress, missing contact points, and loss of teeth, could be made responsible for periodontal lesions. In most instances, the gum tissue was of normal color.

The roentgenographic study of teeth and jaws disclosed that many more cases showed marginal, vertical, and horizontal atrophy than was originally suspected on the basis of clinical examination alone. In six instances the gum tissue appearance was normal, while roentgenographically definite horizontal and vertical atrophy was found. Furthermore, a distinct widening of the periodontal membrane space in the marginal part of the periodontium was noted, although clinical symptoms were absent. A comparative study of all dental roentgenographs obtained in these twenty cases showed, in a large number of cases (eighteen), a decided disproportion in sizes of crowns and roots.

In general, the bone structure showed normal distribution of bone trabeculae, although, in four cases the jaw bone structure appeared definitely porotic.

Conclusions (By Author)

The clinical and roentgenographic study of twenty diabetic children between the ages of 8 and 18 revealed that gingival and periodontal disturbances are very frequently present. In 80 per cent (sixteen cases), definite symptoms of gingivitis, marginal, vertical, and horizontal atrophy and also marginal widening of the periodontal membrane space could be found, alone or together. This seems to indicate that the oral aspect of juvenile diabetes constitutes a very important and early symptom of this systemic disease. It further emphasizes the importance of dental advice for the pediatrician. If he seeks and obtains adequate dental therapeutic care for his patient, the progress of an inflammatory tendency may be arrested, and subsequent loss of alveolar structure, which ultimately leads to a loosening and exfoliation, may be avoided.

The presence of definite periodontal disturbances in diabetic children from 11 to 15 years suggests an aspect of periodontosis frequently ignored by dental and medical practitioners.

Effects of Vitamin C Intake Upon the Degree of Tooth Injury Produced by Diphtheria Toxin: C. G. King, Ph.D., R. R. Musulin, Ph.D., and W. F. Swanson, M.S., D.D.S., *Am. J. Pub. H.* **30**: 1068, September, 1940.

The close relationship of vitamin C intake to the development and maintenance of sound teeth in guinea pigs, monkeys, and men has been recognized for many years. The essentially new features of the present investigation, supplementing an earlier report refer to: (a) the degree of tooth injury that can be caused by diphtheria toxin, and (b) the importance of a high vitamin C intake for protection against such injury. Several authors have reported losses ranging from 30 to 50 per cent of the vitamin C (ascorbic acid) content of tissues following sublethal injections of the toxin.

An interesting clinical report by Dr. Macy and her associates during the past year showed that children receiving a marginal intake of vitamin C were especially sensitive to the development of scurvy during periods of infection.

Additional recent papers provide evidence in support of the viewpoint that ascorbic acid is related to the processes of detoxification both in the human body and in experimental animals. Recent surveys in England appear to have a close bearing on our studies, in that good nutrition and freedom from disease during infancy and childhood were the factors most closely related to freedom from dental caries at the ages of 10 to 14 years.

The injuries to tooth structure that are related to diphtherial toxin and vitamin C involve primarily the dentine and dentine-forming cells, the odontoblasts. In view of the fact that the same tissues are very sensitive to vitamin C deficiency alone, and, further, that the toxin causes a marked loss of vitamin C from the body as a whole, the injury that has been observed consistently after toxin injections may be due primarily to an increased severity of vitamin deficiency. The frequency of tooth fracture on the low nutritional level subsequent to toxin injections, together with the histologic record of increased injury to the odontoblasts and dentine, affords evidence of the benefit to be derived from a vitamin C intake that is above the minimum requirement for normal growth and superficially apparent health. The need for maintaining a vitamin C intake above that required for normal growth and external evidence of adequate nutrition is clearly indicated.

Oncoming Reversal of the Human Growth Tide: C. A. Mills. *Science* **92**: 401-402, Nov. 1, 1940.

Recent completion of a study of height, weight, and menarchial records for over 65,000 freshmen, matriculating in four state universities in recent years, has shown that the reversal in the human growth tide is now becoming more definite. The mean age for onset of the menses, which for many years had been coming progressively earlier with successive birth years of freshmen girls, has now reversed its trend.

The upward trend in student stature, so commonly remarked about and attributed to a better dietary, also shows evidence of reversal in the more southerly states.

Improvement in both height and weight with succeeding classes has been limited largely to gains in the younger age groups of each class, with stature stabilization in the older freshmen of recent years. It appears, therefore, that adult stature may well actually be receding at lower latitudes in the United States, while more rapid growth through childhood and adolescence continues to bring young people to adult stature at ever earlier ages. Even back among students in the early years of high school, this annual stature improvement at a given age is clearly evident. Signs of stabilization have appeared here also in age groups from 13 years upward, while marked annual gains still occur in the stature of any younger age group.

It is suspected that cessation or reversal in the human growth tide may be due to the almost continuous unseasonable warmth that has prevailed generally over the earth since 1929, except for a few very brief periods of subnormal temperatures. If human development is affected by changes in prevailing

temperature level (as that of laboratory animals has been shown to be), then we may well be deeply concerned with the prospects of long-term climatic changes. The marked physical recession of mankind during the Dark Ages occurred during centuries of world warmth, while the recent racial growth expansion has come with generally lower temperatures. Earth temperatures have been trending upward again now for over eight decades, but perhaps reaching the critical level necessary to produce growth depression only with the markedly abnormal warmth that has prevailed since 1929.

Book Reviews

The 1940 Year Book of Dentistry: Edited by Charles G. Darlington, M.D., George W. Wilson, D.D.S., Howard C. Miller, D.D.S., Walter H. Wright, D.D.S., Ph.D., and George R. Moore, D.D.S., M.S. Pp. 842, Price $3.00, Illustrated, Chicago, The Yearbook Publishers, 1940.

This is the fifth edition of the *Year Book of Dentistry*. When we compare the value of the *Year Book* with dental textbooks which cost three to five times as much, we realize that from the standpoint of practical application in his everyday work this is the biggest book value the dentist can buy.

Darlington has handled his section on *Diseases of the Mouth; Pathology; Dental Research, including Oral Hygiene and Periodontia* true to the scope and purpose of this volume, which cannot be said of all the other editors of the *Year Book*. To be specific, we call attention to the special articles which precede each section. Darlington gives a topical review of the newer trends in the various subjects and technical procedures which he covers. His illustrations are well chosen and well reproduced, although in general, the illustrations other than the line cuts, are not all that could be desired. His choice of articles and the abstracts themselves are good. No space is wasted on lengthy discussions. Darlington's editorial remarks at the end of abstracted articles have meaning and add to the value of the abstract by referring to previous publications of the author, additional references to the works of others, either to complement or refute the conclusions, or as explanatory notes. At no time does Darlington arbitrarily undertake to set his opinions above those of the various investigators, which some of the other editors do repeatedly.

It should be realized that editors are not omniscient and omnipotent. It is rather tiresome to read special articles and editorial notes which set forth in detail the personal opinions of the editors. It is not the duty of an editor to pontificate. The editor should not come as a barrier between the author and reader, but should allow the author to speak for himself. If the author has nothing to say, he should not be abstracted. If what the author says requires amplification, specific references should be cited. The mere opinion of the editor does not constitute legitimate refutation of the conclusions presented by an author. Moreover, abstracting scientific articles is a job which requires seasoned judgment, a sound knowledge of dentistry, and at least a modicum of writing

ability. It is not a task that may be safely turned over to students or recently graduated dentists who are not overly familiar with the literature.

As stated at the beginning of this review, the *Year Book of Dentistry* is a major dental publication. The profession is indebted to the publishers for making it possible for the busy dentist to keep abreast of dental progress. That in itself is sufficient reason why the *Year Book* is a *must* in dental books. There are authors' and content indexes which facilitate the use of the book as a reference volume.

J. A. S.

The Art of Anesthesia: By Paluel J. Flagg, Price $6.00, pp. 491, 161 illustrations, Philadelphia, J. B. Lippincott, 1939.

This book, according to the author, is intended primarily for the medical student. However, after perusing the numerous chapters we feel that, although the chapters on the basic concepts of the art and practice of anesthesia may be of some value to those students who intend to make the science of pneumatology their life work, the major part of the book could have been omitted as far as students are concerned. As an expression of the author's personal philosophy and attitude toward the "art of anesthesia" this work should prove interesting reading for all those who have come to regard Paluel Flagg as a pioneer in this particular field.

The style is for the most part archaic. The more modern physiologic approach to the subject of anesthesia is not stressed.

Harry A. Salzmann, M.D.

Bone Graft Surgery in Disease, Injury and Deformity: By Fred H. Albee, New York, pp. 403, D. Appleton-Century Co., 1940.

The fundamental familiarity of the writer with his subject is apparent in every line of this interesting and lucid book. Every orthopedist, general and oral surgeon will find something of value in Albee's latest monograph on bone graft surgery. The epoch-making advances in bone surgery are incorporated in a clear and concise presentation of the fundamental procedures of bone surgery as practiced successfully today by the foremost authorities in this field. Although this is a short work, it covers each subject adequately. The text is illustrated by numerous, easily understandable roentgenographs, photographs, and semischematic drawings.

An excellent bibliography is appended at the end of each chapter which, together with the author and subject index, should greatly increase the practical value of this timely book. This monograph by Dr. Albee on bone graft surgery should prove a welcome and valuable book to every man who is concerned with bone surgery in any form.

Harry A. Salzmann, M.D.

Principles of Surgical Care, Shock and Other Problems. By Alfred Blalock, M.D., Professor of Surgery, Vanderbilt University School of Medicine, Nashville, Tenn. St. Louis, 1940, The C. V. Mosby Co. Cloth, price $4.50. Pp. 325, with illustrations.

This timely monograph on the principles of surgical care should prove a welcome addition to the library of anyone concerned with surgery. Blalock presents the subject matter of the various chapters in a very concise and clear manner, so that even those who are not familiar with the more technical phases of modern physiology and chemistry can readily understand the problems that confront the surgeon in the pre- and postoperative care of the patient. The author has stated the purpose of the present monograph by the following quotation from Sir Berkely Moynihan: "Modern aseptic surgery has made the operation safe for the patient. It is now the aim of surgery to make the patient safe for the operation." After reading through the book, one realizes that Blalock, by his excellent presentation and discussion of the various problems, has contributed greatly to the attainment of this desirable ideal.

The recent literature dealing with the newer conceptions of physiology and biochemistry in their relation to surgery has been most thoroughly reviewed and the reference lists following each chapter are up to the minute. As is to be expected, Blalock is particularly elaborate in his discussion of shock, its recognition and treatment. He presents the evidence for and against the various theories of the conception of shock and discusses the reasons for the conflicting opinions. Blalock also gives us his classifications of shock, which seem to be based on sound logical reasoning resulting from careful clinical and laboratory observations. The newer conceptions of metabolic and nutritional disturbances are discussed in a very understandable manner, a separate chapter being devoted to fluid and electrolytic disorders, acid-base disorders, vitamin deficiencies, and hypoproteinemia. Metabolic and nutritional disturbances in certain systemic diseases, viz., diabetes, hyperthyroidism, and other endocrine disorders, as well as cardiorenal disease, are also discussed.

Postoperative complications, both pulmonary and abdominal, are fully discussed from the viewpoints of both prevention and treatment.

This book, because of its interesting and readable style, should prove of value not only to surgeons, but also to internists who are frequently called upon to aid in the pre- and postoperative care of the surgical patient.

Harry A. Salzmann, M.D.

Special Article

GETTING READY TO TACKLE LIFE

A rather spectacular article, which is the story of Bill and his teeth, has been published and distributed by the Committee on Public Relations of the American Association of Orthodontists. The committee has made these pamphlets available to orthodontists for distribution where it is thought they will do the most service for the public and for orthodontics. This pamphlet merits a place in the printed records of the AMERICAN JOURNAL OF ORTHODONTICS AND ORAL SURGERY. The full text of it follows:

WITH shoulders slouched, eyes glued to the pavement, Bill scuffed his cleated shoes along the graveled walk. Not much point in going home . . . or anywhere, for that matter. . .

He tossed his helmet on the floor in a corner of the back hallway. No use putting it up on the high shelf out of small Helen's reach . . . she could have it now. He was through. Fired from the football squad . . . fired. For some time lately he'd been mixing signals. Several times the team captain had warned him. Now, at last it had come . . . the end of everything.

All through supper he was silent, somberly poking at the food on his plate, eating but little. Mom and Dad noticed his mood and exchanged significant glances. Wisely, they refrained from comment. The meal over, he climbed the stairs to his room, not waiting for the usual query, "How about that homework, Bill?" He sat down heavily at his desk without a glance at his precious wall-map. Nor did he dally to unlock and make the daily inventory of his treasure chest. Elbows on the desk, chin in his hands, he sat there passively, dull and unhappy.

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This was not the first time Bill's behavior had aroused concern. Dad decided to make a little investigation. A few casual remarks about football —always a subject of mutual enthusiasm and understanding—brought only evasive answers. Bill seemed restless, uneasy. Finally the whole distressing story came out, though the tears were manfully held back. It must be his own fault somehow, said Bill, he'd certainly tried his best, but his best just wasn't good enough.

Here was a real crisis. To be put off the "Wolf Pack" team—to fail in the esteem of the Skipper of his Young American League Club—this was a thing that reached deep into Bill's heart, and his parents knew that what they did right now might reach clear through into manhood.

DAD went direct to the Skipper, a young man with whom he was already acquainted. The facts were these: Bill had been slipping gradually for the last six months or more. He seemed to get out of breath sooner than he should, or perhaps it was that he failed to pull himself together as quickly as the other boys after a tough scrimmage. He was increasingly apathetic, unable to think as quickly or act as promptly as the others, with whom, before, he could easily keep pace.

"I was thinking of writing you a note when you came in," said the Skipper. "Better take him to your doctor. It might be the beginning of some serious difficulty."

Bill's parents remembered a number of changes which had been taking place in Bill so insidiously that until now they had not seemed important. There was the mouth-breathing and snoring at night, the frequent colds in winter, the digestive upsets, the gloomy spells that not even the best of friendly joking could pull him out of. Together they had watched him several times, wondering why his mouth hung open so often, displaying the large out-jutting teeth . . . if only he could keep his lips closed down over them! To Bill they had mentioned none of these things, not wishing to make him self-conscious.

> "Adenoids," said the physician, "and his blood picture isn't so good. He's been working under a disadvantage as great as if he had cotton stuffed in his nose. He has been breathing cold air, forcing it down his throat and lungs. The energy required to warm this air is pulling him down, the fungus in the back of his throat is pulling him down, the lack of sufficient oxygen is pulling him down. Yet he tries to keep up with the pack. Some compensation has to be made. Bill slows up in his thinking—there just isn't enough vitality to meet the demands. On the football field he slows up in the 'come back'—at school in his work."

THE adenoids came out at the hands of a nose and throat specialist recommended by the pediatrician. Recovery was rapid. Soon Bill seemed more like his old, energetic self again. But the open-mouthed breathlessness persisted. A habit, thought Bill's parents, not so easily broken. Perhaps it would be best to check up with the physician—he'd been so sympathetic and understanding.

"You are indeed wise," remarked the pediatrician, "to follow this thing through. Parents who are on the alert at Bill's age are making important investments in their boy's future. His little organism is a vast storehouse of possibilities. He is just at the age when he is becoming an entity, a personality. He must hold his own in his world of boys and girls or suffer defeats for which there is no normal and happy adjustment. If he is unable to take his rightful place in his own world now, he is likely to be warped and handicapped in the larger world of adult life later."

"Will those front teeth begin to look better now that the adenoids are out?" asked Bill's mother. "I heard one of his playmates yell 'Hi, Buck-tooth!' at him just the other day. I don't think it bothers him yet, but it does worry me a little."

"I'm coming to that in just a moment," replied the physician. "For his age Bill is as well developed and physically as sound as we could ask. The adenoids are out—he looks better, he feels better. We've checked up on his routine, his diet, rest, his hours of school, his hours of play. But, as you say, his breathing is sometimes heavy, and there are those conspicuous teeth. If we go this one step further we can always have the satisfaction of knowing we've given the boy the best that modern science has put at our disposal. Then we can be sure nothing in the field of physical health and well-being will interfere with a normal and happy life for him. I would advise you to consult an orthodontist."

"That's right," replied his mother, "when Bill had his teeth cleaned and checked over this summer, our dentist said it was time that we should see an orthodontist about the irregularity of his teeth."

TO THE orthodontist Bill went. Plaster models and x-ray pictures were made of his teeth, and facial measurements taken. His problem was studied and explained in more detail. Somewhere in the process of growth and development Nature had gone off the normal track.

"I've heard that thumb-sucking can push teeth out that way," murmured Bill's mother.

"Thumb-sucking," replied the orthodontist, "is natural for many children —some more, some less. If the habit is a prolonged and aggravated one, it can be a contributing cause to this condition of a narrow jaw with protruding teeth.

"To get back to Bill's difficulty, the various growing bones and tissues of his face and jaws have had to compensate for this need—however acquired—to keep his mouth open for breathing, something his mouth was never intended to do. His nose has not been growing as it should. From his eyes down, Bill has been fitting his face to meet false conditions. This wrong trend of growth will persist unless something is done about it, even though one source of trouble, the adenoids, has been removed. His jaws must be gently and slowly guided and molded into a more normal pattern.

"Boys in Bill's present condition often develop into individuals of low resistance, susceptible to disease, with little initiative, preferring to sit on the side-lines and watch life's stream go by rather than get into the current. Despite what you have already done for Bill, the time may come when you will be forced to realize that he always has to be pushed and shoved. Later, he will refuse to be pushed or shoved, and will count himself into the discard."

The orthodontist further explained that these wrong trends of development must be corrected gradually by stimulating growth along more normal lines. This could be done by the use of appliances designed to fit Bill's individual needs. With these appliances attached to his teeth he would be observed and watched carefully over a period of one, or perhaps two years. In such cases, normal growth and mechanical stimulation together bring about changes to which the appliance design is adapted.

BILL'S upper and lower back teeth, the orthodontist continued, were not in proper relation to each other, and this failure to mesh, or inter-lock properly resulted in an inability to grind and prepare food adequately for digestion.

"Oh," said Bill's mother. "That might account for the stomach upsets he gets so easily."

"Yes," went on the orthodontist, "there are many factors we have to consider. What we can do for Bill now will have not only a corrective, but a preventive effect as well. Teeth in malposition suffer the effects either of disuse, improper use, or overuse. Under such conditions cleanliness is difficult to maintain and conditions favoring decay ensue. All this has a definite effect on the digestive system as well as on the teeth themselves."

Just as the development of the trouble had been gradual, so, imperceptibly, came improvement. It was the end of a year before his parents realized how extensive the change had been. Bill made a good patient; he knew the reasons for the treatment being given him, and accepted the inconveniences with an appreciation and tolerance that made him a valuable contributor to the final result.

People who had not seen Bill for several months began to comment on his fine teeth and good looks. It was more than an altered appearance—the change was basic—he was restored to ruggedness. He had the energy and the initiative to tear into things with gusto. He was back on the football team! Life was better—more fun. He had energy for work and energy for play, without expending it all just to live and breathe. No longer did his body pull down his spirits.

Then came the glorious day when Bill told Dad and Mom he had been selected captain of the team for the next year.

"A nice come-back," said Dad, "go on in and win. I'm rooting for you."

Bill drew in a deep breath—"Gee, it was a long grind, Dad, but we made the grade, didn't we?"

How to Use "Getting Ready to Tackle Life"

Constituent orthodontic societies of A.A.O., or members acting on their own initiative, should bring this reprint to the attention of persons affiliated with the following groups in their communities.

Public health field:

(a) health officers
(b) public health nurses
(c) nutritionists
(d) voluntary health associations such as National Committee for Mental Hygiene
(e) public health students
(f) nurses' training schools

Public school field:

(a) school administration authorities
(b) school physicians and nurses
(c) health teaching supervisors (who instruct the teachers how to integrate health knowledge with regular school courses)
(d) Parent-Teacher associations
(e) Child psychologists and vocational advisors

The first step recommended is to approach the local health officer, show him a copy of the reprint, and ask him if he wishes to include it in his regular bulletin or form letter or make distribution in other ways. An offer to supply his needs free of charge will operate as a gesture which may result in the beginning of a valuable future contact.

In a similar way, approach leaders of other groups named above.

It is not improper to purchase copies and have them on a table in the orthodontist's waiting room for callers to take away.

It is strongly urged that the distribution of copies in bulk to the public by officers or members of these groups, *not by individuals of the profession.* (It is not improper for this to be done, however, in the name of a local orthodontic society.) Here are two good reasons: First, distribution by these groups lacks self-interest and will be more likely to produce a forcible impression; second, personal distribution or mailing to large groups from a professional man personally savors of advertising and may react against him in the mind of the intelligent recipient.

Remember the multiplying factor in reaching these persons with educational material. Each one is the equivalent of hundreds of ordinary citizens who may, or may not, have an interest in the subject. Members of the above groups are all *specially interested,* and, in addition, many are teachers of others. Some are teachers of teachers, and so the force of one copy to people of this type means concentration of effort where it will produce the greatest gain.

Members of groups listed above are accustomed to receive educational material of this type free of cost to them. The charge for the reprints is made low to our membership in order to cover Bureau expenses in supplying them. It is expected that the local advantages to be gained by their distribution in the way described above will fully repay the small outlay necessary to offer them for free distribution.

It should be understood by every member of A.A.O. and distinctly interpreted to all contacts that the object of this work is the education, guidance and protection of the public. This branch of dentistry becomes a health service of indispensable value when its standards are upheld.

Editorial

Michigan Dental Law Retained—Arizona Defeated

In the 1940 general election, the residents of the state of Michigan voted about 5 to 3 in favor of the retention of their 1939 Dental Act. This act, which completely revised and greatly strengthened the existing dental law, was opposed by interests that did not want dental advertising restricted. In an attempt to defeat the act, they forced it to a public referendum.

The dental societies of Michigan conducted a vigorous and well-planned campaign to educate the voters to an appreciation of the value of the amendments, and the results indicate that their efforts were worth while. The act went into effect on December 13.

The next incident following this, an attorney representing a Detroit group of so-called advertising dentists, filed suit in December, 1940, asking that the act passed by the legislature in 1939 be declared unconstitutional, and the judge signed a temporary restraining order preventing enforcement of the act and fixed a date for hearing to show cause why the temporary injunction should not be made permanent.

A similar referendum came before the people of the state of Arizona in the November election but with the opposite net result. The referendum there was pertaining to a bill which had previously been enacted by the legislature in its last session to prevent dentists from advertising. In thumbing through the various editorials and advertisements which appeared in the Arizona lay press previous to the election, it becomes plain that what was known as the People's Defense Committee of the Arizona Newspapers Association must assume much of the credit or blame (depending on the viewpoint) for defeating the Arizona anti-advertising law. Display advertisements were carried in the newspapers, which definitely attempted to convey the impression to their readers that a small group of dentists in Arizona desire to maintain a high scale of fees for their services by keeping advertisers out of the state and thereby penalize patients of only moderate income who are unable to pay the fees of the average dentist in that state.

In their display advertisements the newspapers accused the dental profession of influencing the legislature at a previous session to enact a law which it was contended held prices up because the law prevented other dentists from advertising their services to the public.

An advertising dentist practicing in Washington has recently instituted a suit in the United States District Court, in which he asks the court to enjoin the Board of Dental Examiners from enforcing the regulation against advertising because it denies him the protection of the due process clause of the Constitution.

He objects to the regulations under the new law which limit newspaper advertisements to certain specifications on the grounds that if newspaper advertising is permitted at all, the limitation of such advertisements as to space is arbitrary and bears no relation to the public health.

The complaining dentist alleges that he has spent more than $100,000 in newspaper advertising since he has been practicing and earns a large income annually from his practice.

New York, under the authority granted in the 1939 legislative act revising the state insurance law, seems to be on the way to state health insurance unless some kind of a nonprofit medical service is organized by a collusion of medical men and large employers of people.

The Governor of California as recently as January 6, 1941, in his message to the legislature said: "There is but one method that is socially adequate. That is the method already applied to Workmen's Compensation Insurance, Old Age Insurance, and Unemployment Insurance. It is the method applied to health insurance in twenty-four of the twenty-seven countries having health insurance; that is, by making it both universal and compulsory. In the Department of Employment, which administers unemployment insurance in California, we already have the machinery and the organization to take over the work of administering a health insurance plan."

When the A. M. A. was charged by the government with coercive and concerted boycotting in violation of the Sherman Anti-trust Act, the indictment charged that the doctors did thus and so and so because of the fear of business competition and that case is on trial now.

These various incidents add up to the fact that the lay press is becoming effective and that the continued propaganda for socialized medicine which has been in progress for the past few years is taking hold of public thinking in regard to the professions.

It has been contended by some that dentistry, unlike medicine, in most of its departments does not lend itself to a socialized service, that it would be unwieldy and impractical of application. This does not protect it from the coming avalanche of public sentiment being so rapidly crystallized for some type of socialized medicine. Dentistry is being forced slowly to realize that not unlike every other line of human endeavor great changes are happening right before its very eyes. Coming events cast their shadows ahead of them. Ominous and well-defined shadows are disclosing themselves step by step in the events happening from week to week. It was not the dentists who were financially biased in Arizona, it was the newspapers, who feed on advertising contracts, but the public does not know that and has practically no means of finding it out. This is the paradox of these dark shadows that are being cast ahead. Let us no longer say, "It can't happen here." It is happening.

News and Notes

American Association of Orthodontists

The Thirty-Ninth Meeting of the American Association of Orthodontists will be held at the Waldorf Astoria Hotel in New York City, May 5 to 8, 1941.

MAX E. ERNST, Secretary
1250 Lowry Medical Arts Bldg.
St. Paul, Minn.

Five State Postgraduate Clinic

The Tenth Annual Five State Postgraduate Clinic of the District of Columbia Dental Society will convene at the Mayflower Hotel, Washington, D. C., March 9 to 13, 1941.

Dallas Midwinter Dental Clinic

The Dallas Midwinter Dental Clinic, sponsored by the Dallas County Dental Society, will hold its fourteenth annual meeting at the Hotel Adolphus, Dallas, on April 21 to 23. This meeting will follow an all-day session of the House of Delegates of the Texas State Dental Society on April 20.

The study course will be presented by Dr. O. M. Dresden of Milwaukee, Wis., who will speak on "Prosthetic Dentistry"; Dr. Geo. W. Christiansen of Detroit, Mich., on "Oral Surgery"; Dr. W. Clyde Davis of Lincoln, Neb., on "Synthetic Porcelain"; and Dr. Fred Meyers of Minneapolis, Minn., on "Restorative Dentistry."

Cleveland Dental Society

The Spring Clinic Meeting of the Cleveland Dental Society will be held May 5 to 7, at the Statler Hotel, Cleveland.

American Board of Orthodontics

A meeting of the American Board of Orthodontics will be held at the Waldorf-Astoria Hotel, New York City, Saturday, May 3, 1941.

Orthodontists who desire to obtain certificates of qualifications from the Board should secure necessary application blanks from the secretary. Applications must be presented at least sixty days prior to the meeting. For further information, address the secretary.

HARRY E. KELSEY, President
CHARLES R. BAKER, Secretary
636 Church Street, Evanston, Ill.

Denver Summer Seminar

The sixth annual meeting of the Denver Summer Seminar for the study of orthodontics is to be held at the University of Colorado School of Medicine, July 28 to Aug. 2, inclusive.

In accordance with Seminar policy to broaden the scope of the meeting and to include new leaders and material, Charles H. Tweed of Tucson, Ariz., and Isaac Schour of the University of Illinois will appear on the program for the first time this year. A prospectus outlining in detail the course of study for the coming meeting will be available in March to all who have specialized in the practice of orthodontics three years or longer. The Denver Summer Seminar is a nonprofit course conducted for practicing orthodontists.

Sigma Epsilon Delta Convention

The Sigma Epsilon Delta Fraternity will celebrate its fortieth anniversary on April 5 and 6, at the Hotel Pennsylvania, New York City. For further information write Dr. Dan Kollen, 24 West 59th Street, New York, N. Y.

Southern Dental Association

The Southern Dental Association will hold its annual meeting at Charlotte, N. C., on March 17 and 18, at Hotel Charlotte.

Notes of Interest

Dr. A. LeRoy Johnson announces the removal of his offices to 11 East 68th St., New York, N. Y.

Dr. John H. Byrne announces the opening of his new offices at 2602 South Grand Boulevard, St. Louis, Mo. Practice limited to orthodontics.

OFFICERS OF ORTHODONTIC SOCIETIES*

American Association of Orthodontists

President, Henry U. Barber, Jr. - - - - 5 East Fifty-Seventh St., New York, N. Y.
Secretary-Treasurer, Max E. Ernst - - - 1250 Lowry Medical Arts Bldg., St. Paul, Minn.
Public Relations Bureau Director, Dwight Anderson
- - - - - - - - - - - - - - - - 292 Madison Ave., New York, N. Y.

Central Association of Orthodontists

President, Harold J. Noyes - - - - - - - - - 55 E. Washington St., Chicago, Ill.
Secretary-Treasurer, L. B. Higley - - - - - - - 705 Summit Ave., Iowa City, Iowa

Great Lakes Society of Orthodontists

President, Frank S. Cartwright - - - - - - - - Henry Ford Hospital, Detroit, Mich.
Secretary-Treasurer, Richard E. Barnes - - - - - - Republic Bldg., Cleveland, Ohio

Harvard Society of Orthodontists

President, I. D. Davis - - - - - - - - - - - - - - 419 Boylston St., Boston, Mass.
Secretary-Treasurer, Edward I. Silver - - - - - - - - 80 Boylston St., Boston, Mass.

New York Society of Orthodontists

President, Glenn F. Young - - - - - - - - - - 745 Fifth Ave., New York, N. Y.
Secretary-Treasurer, William C. Keller - - - - 40 E. Forty-Ninth St., New York, N. Y.

Pacific Coast Society of Orthodontists

President, Will G. Sheffer - - - - - - - - - - Medico Dental Bldg., San Jose, Calif.
Secretary-Treasurer, Earl F. Lussier - - - - - 450 Sutter St., San Francisco, Calif.

Rocky Mountain Society of Orthodontists

President, A. B. Brusse - - - - - - - - - - - - 1558 Humboldt St., Denver, Colo.
Secretary-Treasurer, Robert L. Gray - - - - - - - - Republic Bldg., Denver, Colo.

Southern Society of Orthodontists

President, Fred G. Hale - - - - - - - - - - - Professional Bldg., Raleigh, N. C.
Secretary-Treasurer, T. C. Sparks - - - - - - 1508 Washington St., Columbia, S. C.

Southwestern Society of Orthodontists

President, E. Forris Woodring - - - - - - - - - Medical Arts Bldg., Tulsa, Okla.
Secretary-Treasurer, R. E. Olson - - - - - - Union Nat'l Bank Bldg., Wichita, Kan.

Washington-Baltimore Society of Orthodontists

President, George M. Anderson - - - - - - - - - 831 Park Ave., Baltimore, Md.
Secretary-Treasurer, Stephen C. Hopkins - - - - - 1726 Eye St., Washington, D. C.

American Board of Orthodontics

President, Harry E. Kelsey - - - - - - - - - - 833 Park Ave., Baltimore, Md.
Vice-President, Frederic T. Murlless, Jr. - - - - - 43 Farmington Ave., Hartford, Conn.
Secretary, Charles R. Baker - - - - - - - - - - 636 Church St., Evanston, Ill.
Treasurer, Bernard G. DeVries - - - - - - - Medical Arts Bldg., Minneapolis, Minn.
William E. Flesher - - - - 806 Medical Arts Bldg., Oklahoma City, Okla.
Frederic T. Murlless, Jr. - - - - - - 43 Farmington Ave., Hartford, Conn.
Oliver W. White - - - - - - - - 213 David Whitney Bldg., Detroit, Mich.
James D. McCoy - - - - - - - - 3839 Wilshire Blvd., Los Angeles, Calif.

Foreign Societies†

British Society for the Study of Orthodontics

President, **S. A. Riddett**
Secretary, **R. Cutler**
Treasurer, **Harold Chapman**

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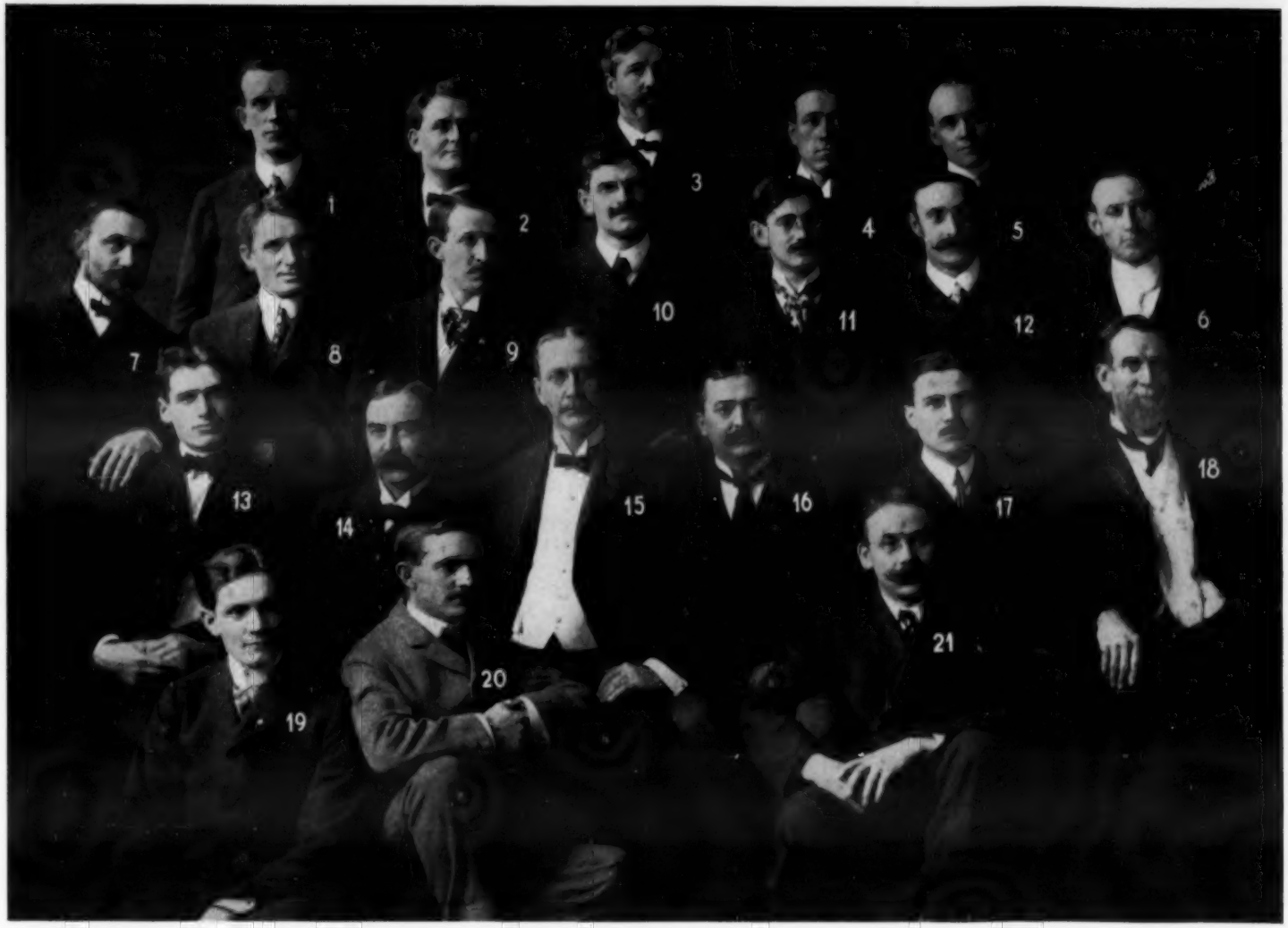
*The Journal will make changes or additions to the above list when notified by the secretary-treasurer of the various societies. In the event societies desire more complete publication of the names of officers, this will be done upon receipt of the names from the secretary-treasurer.

†The Journal will publish the names of the president and secretary-treasurer of foreign orthodontic societies if the information is sent direct to the editor, 8022 Forsythe, St. Louis, Mo., U. S. A.



The Edward H. Angle student group, St. Louis, Mo., 1903. *1*, G. A. Roberts, Toronto, Can. *2*, W. O. Talbot, Biloxi, Miss. *3*, Burt Abell, Albion, Mich. *4*, F. S. McKay, Colorado Springs, Colo. *5*, O. W. White, Detroit, Mich. *6*, H. D. Keeler, Des Moines, Iowa. *7*, Wilson Foster, Kenton, Ohio. *8*, S. E. Dodson, Grand Rapids, Mich. *9*, J. A. Gorman, Asheville, N. C. *10*, J. L. Young, Detroit, Mich. *11*, Alfred P. Rogers, Fall River, Mass. *12*, T. J. Collins, New Zealand. *13*, Martin Dewey, Keokuk, Iowa. *14*, A. H. Thompson, Topeka, Kan. *15*, Edward H. Angle, St. Louis, Mo. *16*, Richard Summa, St. Louis, Mo. *17*, Lloyd S. Lourie, Chicago, Ill. *18*, T. M. Milam, Little Rock, Ark. *19*, William Shaw, Flint, Mich. *20*, F. C. Kemple, Erie, Pa. *21*, A. G. Danforth, New York, N. Y. (Courtesy of Dr. J. A. Gorman, New Orleans, La.)